

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

DENSYS LTD.,

Plaintiff,

v.

3SHAPE TRIOS A/S and 3SHAPE A/S,

Defendants.

Case No. 6:19-cv-680

Jury Trial Demanded

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Densys Ltd. (“Densys”) files this Complaint against 3Shape Trios A/S and 3Shape A/S for patent infringement of United States Patent Nos. 6,402,707 and 9,222,768 (the “patents-in-suit”) (Exhibits 1-2) and alleges as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

THE PARTIES

2. Plaintiff Densys Ltd. is an Israeli company with its principal place of business located at Ha-Marpe 3, AVX building, Har Hotzvim, Jerusalem 97774, Israel.

3. On information and belief, Defendant 3Shape TRIOS A/S is a Danish corporation with its principal place of business at Holmens Kanal 7, 1060 Copenhagen K, Denmark. On information and belief, the main business activities of 3Shape TRIOS

A/S include the development of intraoral 3D scanners and related hardware and software for the purpose international marketing and sales to dentists, orthodontists, and dental and/or orthodontic clinics. On information and belief, 3Shape TRIOS A/S has developed, made, used, sold, offered for sale, or imported into the United States the accused scan bodies, the accused intraoral scanners, and the hardware and software associated with the accused scanners.¹ (Collectively the “Accused Products.”)

4. On information and belief, Defendant 3Shape A/S is a Danish corporation with its principal place of business at Holmens Kanal 7, 1060 Copenhagen K, Denmark. On information and belief, the main activities of 3Shape A/S include the development, production and sale of 3D scanners and related hardware and software. On information and belief, 3Shape A/S has developed, made, used, sold, offered for sale, or imported into the United States one or more of the Accused Products.

5. As referred to herein the term “3Shape” is intended to refer to “3Shape TRIOS A/S and 3Shape A/S, both individually and collectively.” On information and belief, and as set out more fully below, this Court has personal jurisdiction over each of the named defendants, and each of the named defendants is independently responsible for at least one Count of the below-pled Counts of patent infringement.

¹ See, *In the Matter of Certain Color Intraoral Scanners & Related Hardware & Software* Initial Determination on Violation of Section 337 & Recommended Determination on Remedy & Bond, USITC Inv. No. 337-TA-1091 (Mar. 1, 2019)

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

7. Venue is proper pursuant to 28 U.S.C. §§ 1391(c)(3) because the 3Shape defendants are foreign corporations not residing in a United States judicial district, and, therefore, they may be sued in any judicial district pursuant to 28 U.S.C. §§ 1391(c)(3).

8. 3Shape is subject to personal jurisdiction in the United States, and specifically in Texas, pursuant to Fed. R. Civ. P. 4(k)(2). On information and belief, 3Shape is not subject to jurisdiction in any state's courts of general jurisdiction. 3Shape has sufficient minimum contacts with the United States that include, *inter alia*, importing, advertising, offering to sell, and/or selling the Accused Products and related products and services throughout the United States, including in the State of Texas and this judicial district, and such that 3Shape should reasonably and fairly anticipate being hauled into court in the State of Texas and this judicial district.

9. This Court has personal jurisdiction pursuant to the Texas Long Arm Statute. *See* Tex. Civ. Prac. & Rem. Code §§ 17.042(1), (2), and (3).

10. On information and belief, 3Shape is subject to the Court's personal jurisdiction because it regularly conducts and solicits business, or otherwise engages in other persistent courses of conduct in the State of Texas and in this judicial district, and/or derives substantial revenue from the importation, sale, and distribution of

goods and services provided to individuals and businesses in the State of Texas and in this judicial district.

11. On information and belief, 3Shape has purposefully directed its marketing, sales, distribution, and importation activities towards, and in relation to, the State of Texas and its residents.

12. On information and belief, 3Shape has delivered the accused products into the stream of commerce with the expectation that they will be purchased by consumers residing in the State of Texas and this judicial district.

13. This Court has personal jurisdiction over 3Shape because, *inter alia*, 3Shape, on information and belief: (1) has committed acts of patent infringement in this State and judicial district, (2) has substantial, continuous, and systematic contacts with this State and this judicial district; (3) enjoys substantial income from its operations and sales in this State and this judicial district; (4) employs Texas residents in this State and this judicial district, and (5) solicits business and markets products, systems and/or services in this State and judicial district including, without limitation, related to the below-accused infringing 3Shape products and services.

3Shape's Contracts with Texas Residents

14. 3Shape is subject to this Court's personal jurisdiction, in accordance with due process and/or the Texas Long Arm Statute, in part, because 3Shape "contracts by mail or otherwise with a Texas resident and either party is to perform the contract in whole or in part in this state." *See* Tex. Civ. Prac. & Rem. Code § 17.042(1).

15. On information and belief, 3Shape maintains contracts with one or more Texas residents related to its dental scanning business.

16. On information and belief, 3Shape maintains contracts with Texas residents, including: distributors of the Accused Products, resellers of the Accused Products, 3Shape's agents and/or employees, dental and orthodontic practices, dental labs, and conference and trade show promoters.

**3Shape's Contracts with
In-State Distributors and Resellers**

17. Mr. Christoffer Melchior, Vice President of 3Shape A/S of Global Sales and Customer Care has previously testified that 3Shape sells its products to resellers based in the United States.² More specifically, Mr. Melchior has testified that 3Shape TRIOS A/S "sells trios scanners to 3Shape's U.S. resellers."³

18. Mr. Melchior has also testified that 3Shape does after-sales support, when resellers cannot solve a technical issue for an end user.⁴ On information and belief, 3Shape has entered into contracts related to its after-sales product support obligations in the State of Texas and in this judicial district.

² See generally Hearing Transcript, dated September 19, 2018, taken in *In the Matter of: Certain Color Intraoral Scanners and Related Hardware and Software*, under ITC Investigation No.: 337-TA-1091 (Exhibit 3). See Ex. 3 at pp. 759-760.

³ See Ex. 3 at p. 764.

⁴ See Ex. 3 at p. 760.

19. On information and belief, 3Shape contracts with multiple dental product resellers and/or distributors located in the State of Texas, including but not limited to Henry Schein Dental, Patterson Dental, LED Dental, and Dental Planet.

20. On information and belief, 3Shape contracts with dental product resellers and/or distributors located in the State and this judicial district for the purpose of reselling, distributing, importing, selling, supporting, marketing, or offering to sell dental scanning products and services including without limitation the Accused Products.

21. On information and belief, 3Shape maintains contracts with its US distributors and/or resellers related to distribution agreements, re-selling agreements, after-sales support agreements, end-user training agreements, agreements related to the training and support of the staff of said distributor and/or reseller, warrantee support agreements, defective product replacement agreements, end-user license agreements, and marketing agreements.

22. On information and belief, 3Shape has entered into one or more contracts with resellers and/or distributors who are residents of the State of Texas and of this judicial district.

23. On information and belief, the contracts 3Shape has entered into with its US-based distributors and/or US-based resellers include contracts, which are to be performed in whole or in part in the State of Texas and in this judicial district.

24. For example, and on information and belief, 3Shape contracts with a reseller and/or distributor known as "Henry Schein Dental" to supply Henry Schein

Dental with 3Shape Trios Intraoral Scanning Systems⁵ for further resell and/or distribution to dental and orthodontic practices located in the State of Texas and in this judicial district. On information and belief, Henry Schein Dental maintains multiple branch locations in this judicial district, including branches located at 2120 W. Braker Lane - Suite B, Austin, TX 78758 and 12007 Starcrest Drive, San Antonio, TX 78247.⁶

25. On information and belief, Henry Schein Dental is the largest reseller and/or distributor of 3Shape products in the United States.

26. On information and belief, Henry Schein Dental maintains multiple locations in the State of Texas and in this judicial district, which are the among the locations where contracts between 3Shape and Henry Schein Dental relating to, without limitation, and the support of, reselling of, or distribution of the Accused Products, are to be performed in whole or in part.

27. On information and belief, Henry Schein Dental hires persons holding titles of “Certified Trios Trainer,”⁷ “Digital Technology Specialist,”⁸ and “Technology Training Manager”⁹ who reside in this State and in this judicial district to use, demonstrate, train, market, sell, and/or offer to sell the accused 3Shape Trios Intraoral

⁵ See <https://henryscheinequipmentcatalog.com/cad-cam/intraoral-scanners/3shape-trios-wireless-pod>

⁶ See <https://www.henryschein.com/us-en/dental/find-office-locations.aspx#TX>

⁷ See e.g. <https://www.linkedin.com/in/cindy-green-30675093/>.

⁸ See e.g. <https://www.linkedin.com/in/christy-stransky-690a0a119/>

⁹ See e.g. <https://www.linkedin.com/in/amy-reynolds-01bb5852/>

Scanning Systems to customers and potential customers located in the State of Texas and this judicial district. On information and belief, part of the work performed by Henry Schein Dental personnel in the State of Texas and in this judicial district, is performed pursuant to a contract between Henry Schein Dental and 3Shape.

28. As a further example, and on information and belief, 3Shape contracts with a reseller and/or distributor known as “Patterson Dental” to supply Patterson Dental with 3Shape Trios Intraoral Scanning Systems¹⁰ and 3Shape Scan Bodies¹¹ for resell and/or distribution to dental and/or orthodontic practices located in the State of Texas and in this judicial district. On information and belief, Patterson Dental maintains multiple branch locations in this judicial district, including branches located at 106 East Old Settlers Blvd., Bldg. D - Suite 150, Round Rock, TX 78664 and 12625 Wetmore Road, Suite 103, San Antonio, TX 78247.

29. On information and belief, Patterson Dental is the second largest reseller and/or distributor of 3Shape products in the United States.

30. On information and belief, Patterson Dental maintains multiple branch locations and a distribution center in the State of Texas and in this judicial district, which are the locations where contracts between 3Shape and Patterson Dental relating

¹⁰ See <https://www.pattersondental.com/equipment-technology/product/345856/3shape-trios-3-wireless-scanner>

¹¹ See https://www.pattersondental.com/Supplies/ProductFamilyDetails/PIF_801370

to the reselling and/or distribution of 3Shape Trios Intraoral Scanning Systems and 3Shape Scan Bodies are performed in whole or in part.



See <https://www.pattersondental.com/ContactUs/MyLocalTeam?tab=BranchLocator>.

31. As a further example, and on information and belief, 3Shape contracts with a reseller and/or distributor known as “Dental Planet” to supply Dental Planet with 3Shape Trios Intraoral Scanning Systems¹² for resell and/or distribution to dental and/or orthodontic practices located in the State of Texas and in this judicial district. On information and belief, Dental Planet, LLC is a company organized under the laws of the State of Texas, and is registered with the Texas Comptroller of Public Accounts

¹² See <https://www.dentalplanet.com/shop/product/3sh-scan01-3shape-trios-intraoral-scanner-202246?search=trios>

under Texas SOS File No. 0801514037, with a registered office street address of 303 W. Wall, Suite 2400, Midland, TX 79701.

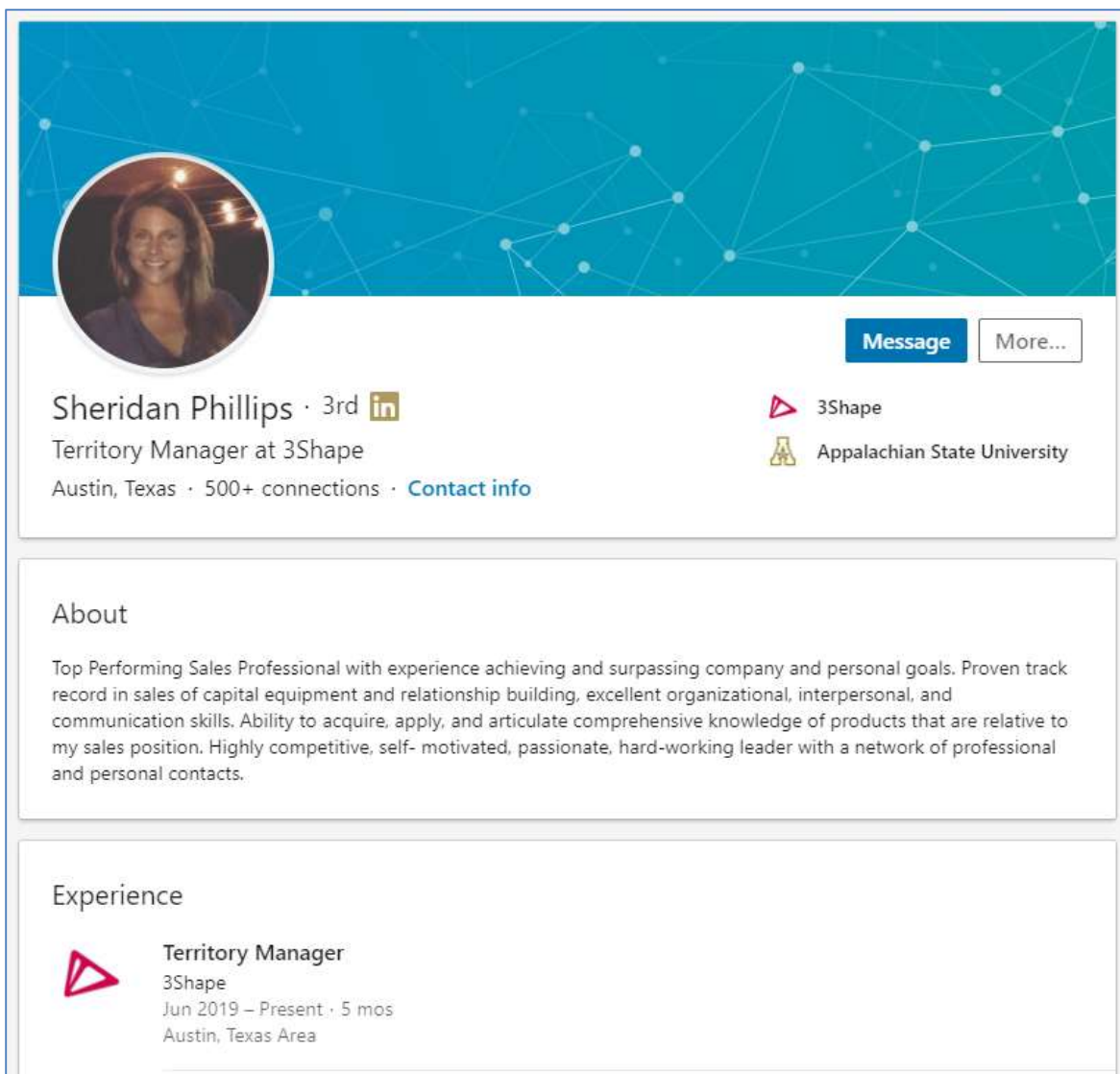
32. On information and belief, Dental Planet maintains multiple locations in the State of Texas and in this judicial district, which are among the locations where contracts between 3Shape and Dental Planet relating to the reselling and/or distribution of the Accused Products are performed in whole or in part.

3Shape's Contracts
with 3Shape's In-State Territory Managers

33. On information and belief, 3Shape contracts with one or more "Territory Managers," who are Texas residents whose job description includes identifying, establishing and fostering relationships with customers and resellers, including customers and resellers located in the State of Texas and in this judicial district.¹³

¹³ See <https://careers.3shape.com/jobs/294527-us-territory-manager>

See also <https://www.linkedin.com/salary/territory-manager-salaries-in-austin-texas-area-at-3shape>



See e.g., <https://www.linkedin.com/in/sheridan-phillips-3942b262/>

34. On information and belief, 3Shape's Territory Managers and/or other agents are responsible for selling and offering to sell the Accused Products. On information and belief, one or more of 3Shape's agents and/or employees, including but not limited to its agents and/or employees holding the title of "Territory Manager," has sold or offered to sell the 3Shape Trios Intraoral Scanning System to customers or prospective customers residing in the State of Texas and in this judicial district.

3Shape's Contracts
with 3Shape's In-State Customers

35. On information and belief, 3Shape contracts with its customers who reside in the State of Texas and in this judicial district, where a party to such a contract is to perform the contract in whole or in part in the State of Texas and in this judicial district.

36. On information and belief, 3Shape's Texas-based customers include resellers, distributors, dentists, dental practices, orthodontists, orthodontic practices, dental lab owners, and dental lab practices.

37. For example, and on information and belief, 3Shape contracts with multiple dental and/or orthodontic practices including but not limited to, "Creekwood Dental Arts" (Waco, Texas) and "Merrily Sandford, DDS & Associates" (Austin, Texas), which reside in the State of Texas and in this judicial district.¹⁴ On information and

¹⁴ See e.g., Creekwood Dental Arts, located at 7911 Woodway Dr, Waco, TX 76712. <https://www.benzinga.com/pressreleases/18/04/p11538295/drs-donna-miller-and-michelle-hinds-offer-cosmetic-dentistry-and-profe> ("In addition to take-home teeth whitening in Waco, TX, Drs. Miller and Hinds use comfortable in-office products that achieve results quickly. For patients who require additional methods of smile enhancements such as dental implants, dental crowns, orthodontics and veneers, the dentists rely on a special handheld TRIOS® intraoral scanner. The TRIOS product creates precise digital impressions that enable fast and accurate treatments.") See also Merrily Sandford, DDS & Associates located at 2303 Ranch Rd. 620 S., Ste. 140, Austin, TX 78734. <https://www.austinhealthydentist.com/services/dental-technology/trio-scanner-digital-impressions/> ("Trios Scanner Digital Impressions in Austin, Texas: Our dentist, Dr. Merrily Sandford, and our team want to make your experience with us as pleasant as possible. To that end, we forego the use of gooey dental alginate by using a Trios Scanner to digitally take an impression of your mouth. If you are looking for a dentist in Austin, Texas, who uses digital impressions, call today...")

belief, 3Shape supplies and supports Texas-based dental and orthodontic practices with respect to the use of the Accused Products.

38. On information and belief, the contracts that 3Shape maintains with its customers, including but not limited to dental and/or orthodontic practices who reside in the State of Texas and this judicial district include: sales agreements, replacements agreements, service agreements, training agreements, support agreements, end-user license agreements and/or warrantee agreements.

39. On information and belief, there are multiple locations including but not limited to multiple dental and/or orthodontic practice locations in the State of Texas and in this judicial district, where contracts between 3Shape and its customers, including but not limited to dental and/or orthodontic practices, relating to the sales, support, distribution, or use of the Accused Products are performed in whole or in part.

40. On information and belief, 3Shape contracts with dental labs residing in the State of Texas, including but not limited to dental labs which have been accredited as “3Shape Ready Labs” that are located in this State and judicial district. A number of 3Shape Ready Labs located in this judicial district are listed on 3Shape’s website,¹⁵ and include: Summit Dental Lab,¹⁶ Creative Dental,¹⁷ BNR Dental Lab,¹⁸ Medina Dental

¹⁵ See <https://www.3shape.com/en/services/ready-programs>

¹⁶ See <http://www.summit-dental.com/index>

¹⁷ See <https://www.yelp.com/biz/creative-dental-designs-woodway>

¹⁸ See <https://www.bnrdentallab.com/>

Restorations,¹⁹ Palmer Dental Ceramics,²⁰ Link Dental Ventures,²¹ Watson Dental Lab,²² and Midtex Dental Lab.²³

41. On information and belief, there are multiple contracts entered into by 3Shape and “3Shape Ready Labs.” More specifically, and on information and belief, there are multiple contracts entered into by 3Shape and “3Shape Ready Labs” as a part of the process of designating a dental lab as “3Shape Ready.”²⁴

42. On information and belief, the contracts entered into by 3Shape and multiple “3Shape Ready” dental labs residing in the State of Texas and in this judicial district include contracts related to “service agreements,”²⁵ “3Shape LabCare Subscription Package [agreements],”²⁶ “Warranty and Scanner Replacement

¹⁹ See <https://www.manta.com/c/mhkjch2/medina-dental-restorations-llc>

²⁰ See <https://palmerdentalceramics.com/>

²¹ See <https://b-m.facebook.com/linkdentalventuresllc/>

²² See <http://www.watsondentallab.com/>

²³ See <https://www.chamberofcommerce.com/united-states/texas/midland/laboratories-clinical-medical-diagnostic/38550974-midtex-dental-lab>

²⁴ See <https://www.3shape.com/en/services/ready-programs>

²⁵ See https://www.kulzer.com/media/webmedia_local/downloads_new/cara_11/downloads_8/brochures_1/en/3Shape_Dental_System_Product_Information_EN.pdf

²⁶ See https://www.kulzer.com/media/webmedia_local/downloads_new/cara_11/downloads_8/brochures_1/en/3Shape_Dental_System_Product_Information_EN.pdf

Agreements,”²⁷ promotion agreements,²⁸ Dental System Software purchase agreements,²⁹ training agreements,³⁰ upgrade agreements,³¹ global support agreements,³² 3Shape Cambridge Software agreements,³³ 3Shape Desktop Scanner purchase and/or support agreements,³⁴ end-user license agreements, and 3Shape Trios Ready Program agreements.³⁵

43. On information and belief, there are multiple “3Shape Ready” dental lab locations in the State of Texas, and more specifically within this judicial district, where

²⁷ See

https://www.kulzer.com/media/webmedia_local/downloads_new/cara_11/downloads_8/brochures_1/en/3Shape_Dental_System_Product_Information_EN.pdf

²⁸ See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

²⁹ See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

³⁰ See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

³¹ See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

³² See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

³³ See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

³⁴ See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

³⁵ See <https://ww2.3shape.com/en/customer-programs/3shape-ready-programs/trios-ready#myModal>

contracts between 3Shape and such Texas-based “3Shape Ready” dental lab are to be performed in whole or in part.

3Shape’s In-State Marketing Efforts

44. On information and belief, 3Shape supports and markets its Accused Products to customers and potential customers, who reside in the State of Texas and in this judicial district through various means, including through: the efforts of its domestic agents and/or employees; its website; its 3Shape Academy Program; its YouTube Videos; and its attendance and promotion of its products at Texas-based trade shows and professional conferences.

45. On information and belief, 3Shape has agents that reside in the United States, including but not limited to a domestically-organized company known as “3Shape, Inc.”

46. Mr. Christoffer Melchior, Vice President of 3Shape A/S of Global Sales and Customer Care has testified that 3Shape’s “country organization in the United States,” 3Shape, Inc. “reports to” him.³⁶

47. On information and belief, 3Shape exercises control over 3Shape, Inc.

48. On information and belief, 3Shape has contracted with 3Shape, Inc. to perform acts, which relate to the use, sales, marketing, and offers to sell the Accused Products, where the performance of such contract or contracts is to be performed in part in the State of Texas and in this judicial district.

³⁶ See Ex. 3 at pp. 759-761.

49. On information and belief, one or more of 3Shape's agents and/or employees, including but not limited to its agents and/or employees holding the title of "Territory Manager," has sold or offered to sell the Accused Products to customers or prospective customers residing in the State of Texas and in this judicial district.

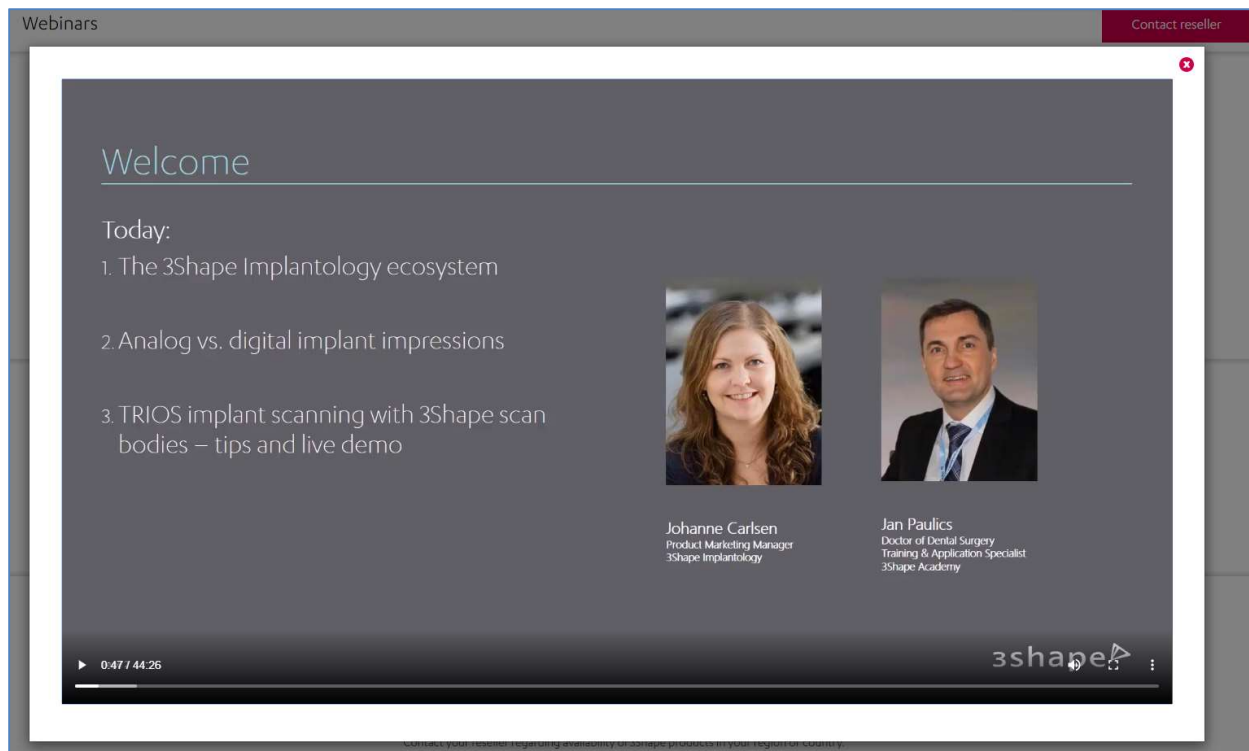
50. On information and belief, 3Shape is a party to contracts for the sales and support of the Accused Products, which were entered into as the result of the in-state marketing efforts of its agents and/or employees, and where the performance of such contracts is to be performed, in whole or in part, in the State of Texas and in this judicial district.

51. As a further example of 3Shape's in-state marketing activities, on information and belief, 3Shape's website, www.3Shape.com, provides an online shopping platform³⁷ for, among other things, updating subscriptions to its scanning software. On information and belief, 3Shape's online shopping platform is utilized by customers and/or prospective customers who reside in the State of Texas and in this judicial district. On information and belief, 3Shape is a party to contracts related to scanning related products and services, which are entered into by users of 3Shape's online shopping platform, where the performance of such contract is to be performed, in whole or in part, in the State of Texas and in this judicial district.

52. On information and belief, 3Shape's website, www.3Shape.com, also offers training and videos on how to use its dental scanning products and services,

³⁷ See <https://www.3shape.com/shop>

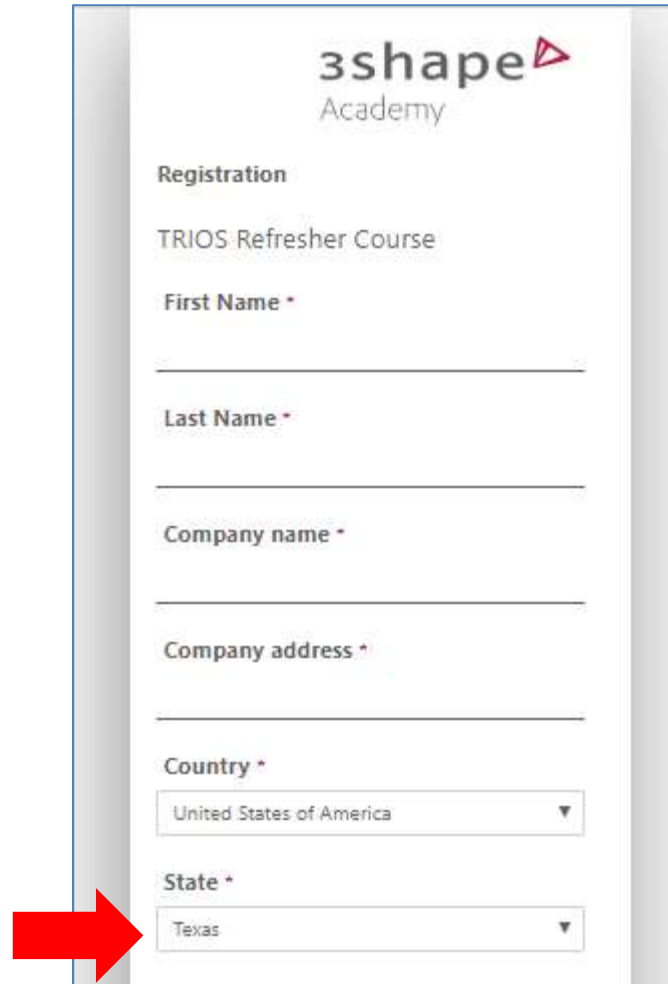
including without limitation the accused 3Shape Trios Intraoral Scanning Systems and accused 3Shape Scan Bodies, as demonstrated by the screen capture below:



See e.g. <https://ww2.3shape.com/en/knowledge-center/webinars#myModal> .

53. On information and belief, 3Shape's website, www.3Shape.com, also offers product training services under the branding "3Shape Academy."³⁸ On information and belief, the participants of the 3Shape Academy include 3Shape customers and prospective customers residing in the State of Texas and in this judicial district, as demonstrated by its intake registration form, which specifically contemplates Texas-based enrollees for the 3Shape Academy, as shown in the screenshot below:

³⁸ See <https://www.3shape.com/en/academy> .



3shape Academy

Registration

TRIOS Refresher Course

First Name *

Last Name *

Company name *

Company address *

Country *

United States of America ▼

State *

Texas ▼

See <https://forms.3shape.com/cn/azvuv/training15319> .

54. On information and belief, the online visitors of the www.3Shape.com website include 3Shape customers and prospective customers residing in this State and in this judicial district.

55. On information and belief, 3Shape utilizes its website, www.3Shape.com, to market its accused 3Shape Trios Intraoral Scanning Systems³⁹ and accused 3Shape

³⁹ See <https://www.3shape.com/en/scanners/trios> .

Scan Bodies⁴⁰ to customers and prospective customers residing in the State of Texas and in this judicial district.

56. On information and belief, 3Shape's website, www.3Shape.com, further provides a resources page with user manuals on the products and how to use the products to encourage purchase and use of 3Shape products and services, including without limitation the accused 3Shape Trios Intraoral Scanning Systems⁴¹ and accused 3Shape Scan Bodies.⁴²

57. On information and belief, the individuals and business entities who have downloaded online resources encouraging purchases of 3Shape products and services include 3Shape customers and prospective customers residing in the State of Texas and in this judicial district.

58. On information and belief, 3Shape is a party to contracts related to its Accused Products, which are entered into by Texas-based users of 3Shape's website, where the performance of such contract is to be performed, in whole or in part, in the State of Texas and in this judicial district.

59. As a further example of 3Shape's in-state marketing activities, on information and belief, 3Shape utilizes YouTube to market its Accused Products to

⁴⁰ See <https://www.3shape.com/en/scan-bodies> .

⁴¹ See <https://embed.widencdn.net/pdf/plus/3shape/9gjkyqthjr/3Shape-TRIOS-2019-Brochure-EN.pdf?u=6xmdhr>

⁴² See <https://www.3shape.com/-/media/files/case-studies-pdf/clinical-cases/3shape-trios-implant-scanning.pdf?v=225c165f-fcb5-4601-a8d9-afdfc5b922b5>

customers and prospective customers, including customers and prospective customers residing in the State of Texas and in this judicial district.

60. On information and belief, 3Shape has a YouTube channel with training videos, accessible at www.youtube.com/3ShapeTrainingVideos,⁴³ showing how to use its intraoral scanning products and services, including without limitation the accused 3Shape Trios Intraoral Scanning Systems⁴⁴ and accused 3Shape Scan Bodies.⁴⁵

61. On information and belief, the online viewers of 3Shape's YouTube videos include 3Shape's customers and prospective customers residing in the State of Texas and in this judicial district. On information and belief, 3Shape is a party to contracts related to its Accused Products, which are entered into by Texas-based viewers of 3Shape's YouTube videos, where the performance of such contract is to be performed, in whole or in part, in the State of Texas and in this judicial district.

62. As a further example of 3Shape's in-state marketing activities, on information and belief, 3Shape attends and acts as an exhibitor at trade shows and conferences in the United States,⁴⁶ including in this State and in this judicial district,⁴⁷

⁴³ See also <https://www.youtube.com/channel/UCxEI9LrUI3A7SjkOPbDLPpg> .

⁴⁴ See https://www.youtube.com/watch?v=M_KbWcCianY .

⁴⁵ See <https://www.youtube.com/watch?v=s-LnnPVgrHA> .

⁴⁶ See <https://www.3shape.com/en/events> .

⁴⁷ See <https://www.3shape.com/en/news/2017/how-to-price-an-intraoral-scanner-for-your-dental-practice> . See also <https://apteryx.com/news-post/led-medical-provides-august-2015-business-update/> ; https://www.ada.org/~media/ADA_Annual_Meeting/Files/ADA17_Onsite_Guide.pdf?la=en ;

where it has demonstrated, and continues to demonstrate, the use of the its dental scanning products and services, including without limitation the accused 3Shape Trios Intraoral Scanning Systems⁴⁸ and accused 3Shape Scan Bodies⁴⁹ to the public, its existing customers, and its prospective customers, including without limitation, to dentist and orthodontists who reside in the State of Texas and in this judicial district.

63. On information and belief, 3Shape has directed its employees and agents to attend conferences and trade shows in the State of Texas.

64. On information and belief, 3Shape, its employees, and its agents have attended Texas-based trade shows and conferences as exhibitors and/or presenters in order to promote the Accused Products.

65. On information and belief, 3Shape, its employees, and/or its agents have promoted the Accused Products at Texas-based trade shows and conferences because 3Shape specifically intends for those trade-show and conference attendees to buy its Accused Products.

66. Mr. Melchior has testified that 3Shape holds demo intraoral scanning units, which it uses for training purposes, including at conferences and other events.⁵⁰

https://editions.mydigitalpublication.com/publication/?i=223721&article_id=1803600&view=articleBrowser&ver=html5#{%22issue_id%22:223721,%22view%22:%22articleBrowser%22,%22article_id%22:%221803600%22} .

⁴⁸ See e.g. <https://www.youtube.com/watch?v=Rvz25TDf5s0> .

⁴⁹ See e.g. <https://www.youtube.com/watch?v=b3L6RSHMV84> .

⁵⁰ See Ex. 3 at p. 764-765.

67. On information and belief, 3Shape has used, sold, and offered for sale its Accused Products at trade shows and conferences in the United States, including in the State of Texas and in this judicial district.

68. On information and belief, the individuals and business entities who have interacted with 3Shape, its employees, or its agents at trade shows or conferences include 3Shape customers and prospective customers, who reside in this State and in this judicial district. On information and belief, 3Shape is a party to contracts related to the Accused Products, which are entered into by Texas-based individuals and business which have interacted with 3Shape and/or 3Shape's agents at trade shows and/or conferences, where the performance of such contract or contracts is to be performed, in whole or in part, in the State of Texas and in this judicial district.

69. As a specific example of 3Shape's in-state conference activities, on information and belief, 3Shape, its employees, and/or its agents marketed the accused 3Shape Trios Intraoral Scanning System to potential customers in the State and in this judicial district at the American Dental Association (ADA) 2014 conference, which was held in San Antonio in October of 2014.

70. On information and belief, 3Shape or its agents entered into a contract with one or more entities, including without limitation the ADA 2014 conference organizers, in relation to its marketing activities related to the ADA 2014 Conference, wherein at least one party to that contract performed their obligations under that contract in whole or in part in the State of Texas, including specifically in the City of San Antonio.

71. As another specific example of 3Shape's in-state conference activities, on information and belief, 3Shape or its agents entered into a contract with one or more entities in relation to the American Academy of Dental Sleep Medicine 2019 Conference, held on or about June 7-9, 2019 in San Antonio, Texas,⁵¹ wherein at least one party to that contract performed their obligations under that contract in whole or in part in the State of Texas. On information and belief, 3Shape or its agents exhibited the accused 3Shape Intraoral Scanning System at the American Academy of Dental Sleep Medicine 2019 conference for the purpose of selling and offering for sale its accused products and services to customers and prospective customers located in the State of Texas, and more specifically in the City of San Antonio.⁵²

72. On information and belief, 3Shape or its agents entered into an exhibitor contract, in relation to its exhibition activities at the American Academy of Dental Sleep Medicine 2019 conference, which was substantially in accordance with the one available on the American Academy of Dental Sleep Medicine website.⁵³

73. As another specific example of 3Shape's in-state conference activities, on information and belief, 3Shape or its agents entered into a contract with one or more entities, including but not limited to a trade show or conference promoter, in relation to its marketing activities related to the American Academy of Implant Dentistry

⁵¹ See https://www.aadsm.org/docs/2019_Final_Program_Web5-16.pdf

⁵² See https://www.aadsm.org/docs/2019_Final_Program_Web5-16.pdf

⁵³ See https://aadsm.org/docs/Exhibitor_Application_for_Webpage.pdf

conference, held on or about September 26-29, 2018 in Dallas, Texas,⁵⁴ wherein at least one party to that contract performed their obligations under that contract in whole or in part in the State of Texas. On information and belief, 3Shape or its agents exhibited the accused 3Shape Intraoral Scanning System at the American Academy of Implant Dentistry conference for the purpose of marketing, selling, and/ or offering to sell its Accused Products to customers located in the State of Texas.

74. As another specific example of 3Shape's in-state conference activities, on information and belief, a business entity or multiple related business entities known as either "LED Dental, Inc.," "LED Medical," "Apteryx, Inc.," and/or "Apteryx Imaging Inc." contracted with 3Shape or its agents to "become a distributor for the TRIOS line of products, including the new TRIOS 3 digital impression system for the Orthodontic market."⁵⁵ On information and belief, pursuant to such contract an entity known as "LED Dental" exhibited the 3Shape Trios Intraoral Scanning System at the Southwestern Society of Orthodontists in San Antonio, Texas⁵⁶ as a part of 3Shape's efforts to market, sell, and offer to sell its accused 3Shape Trios Intraoral Scanning System to customers and potential customers residing in the State of Texas and in this judicial district.

⁵⁴ See https://www.aaid.com/uploads/cms/documents/AC2018_Exhibitor-Sponsor_Prospectus.pdf

⁵⁵ See <https://apteryx.com/news-post/led-medical-provides-august-2015-business-update/>

⁵⁶ See <https://apteryx.com/news-post/led-medical-provides-august-2015-business-update/>

75. As another specific example of 3Shape's in-state conference activities, on information and belief, 3Shape or its agents entered into a contract with one or more entities, including but not limited to a trade show or conference promoter, in relation to its activities related to a conference that was held at the Courtyard by Marriott, located at 2300 Interstate 30 Frontage Street, Mesquite, TX 75150 on or about April 19, 2019,⁵⁷ ("The Mesquite Conference"), wherein at least one party to that contract performed their obligations under that contract in whole or in part in the State of Texas. On information and belief, Mr. Carl Horrocks works as a Business Development Manager for 3Shape A/S.⁵⁸ On information and belief, Mr. Horrocks was a presenter at The Mesquite Conference.⁵⁹ On information and belief, Mr. Horrocks was present in the State of Texas, in part, to promote and market 3Shape's digital dentistry products and services, to the attendees of The Mesquite Conference, including to customers and potential customers residing in the State of Texas.⁶⁰

3Shape's Employment of Texas Residents

76. On information and belief, 3Shape is additionally subject to this Court's personal jurisdiction, in accordance with due process and/or the Texas Long Arm

⁵⁷ See <https://www.eventbrite.com/e/digital-rpd-production-and-zirconia-solutions-a-to-z-tickets-55763454995>

⁵⁸ See <https://www.linkedin.com/in/carl-horrocks-aaa50219/>.

⁵⁹ See <https://www.eventbrite.com/e/digital-rpd-production-and-zirconia-solutions-a-to-z-tickets-55763454995>

⁶⁰ See <https://www.eventbrite.com/e/digital-rpd-production-and-zirconia-solutions-a-to-z-tickets-55763454995>

Statute, in part, because 3Shape recruits Texas residents, including one or more territory managers, for employment inside or outside this state. *See* Tex. Civ. Prac. & Rem. Code § 17.042(3). *See e.g.*, <https://www.linkedin.com/in/sheridan-phillips-3942b262/>

3Shape's In-State Patent Infringement

77. On information and belief, 3Shape is additionally subject to this Court's personal jurisdiction, in accordance with due process and/or the Texas Long Arm Statute because, in part, 3Shape infringes the patents-in-suit in whole or in part in this State and this judicial district by using, importing, selling, and offering to sell the accused products and services to customers and potential customers, such as the previously identified resellers and/or distributors, as well as dental and orthodontic practices that reside in the State of Texas and within this judicial district. *See* Tex. Civ. Prac. & Rem. Code § 17.042(2).

78. This Court has personal jurisdiction over 3Shape because it committed and continues to commit acts of infringement in the State of Texas and in this judicial district in violation of 35 U.S.C. §§ 271(a) and (b). In particular, and on information and belief, 3Shape has made, used, imported, offered to sell, or sold infringing products and services, and has actively induced others to make, use, sell, offer to sell and/or import the accused products and related products and services throughout the United States, including in the State of Texas and this judicial district.

**3Shape's Importation of
Infringing Products into the State of Texas**

79. On information and belief, 3Shape TRIOS A/S has previously stipulated to its importation of the accused the 3Shape Trios Intraoral Scanning System into the United States. *See In the Matter of Certain Color Intraoral Scanners & Related Hardware & Software* Initial Determination on Violation of Section 337 & Recommended Determination on Remedy & Bond, USITC Inv. No. 337-TA-1091 (Mar. 1, 2019).

80. On information and belief, and on the basis of 3Shape's stipulation, the International Trade Commission has found that ("3Shape does not dispute that 3Shape Trios A/S imports the accused products and has stipulated to this importation by 3Shape Trios A/S.").⁶¹

81. On information and belief, 3Shape, and/or its agents, has imported and shipped dental scanning products, including but not limited to the Accused Products, from outside of the United States directly to one or more shipping addresses located in the State of Texas.

82. On information and belief, 3Shape TRIOS A/S and 3Shape A/S, act either individually or in concert, as developers, manufacturers, distributors, importers and/or

⁶¹ See also *In the Matter of Certain Intraoral Scanners & Related Hardware & Software* Initial Determination on Violation of Section 337; Recommended Determination on Remedy & Bonding, USITC Inv. No. 337-TA-1090 (Apr. 26, 2019)

marketers of the accused 3Shape Trios Intraoral Scanning System and 3Shape Scan Bodies.⁶²

83. On information and belief, 3Shape TRIOS A/S manufactures the accused 3Shape Trios Intraoral Scanning Systems, in whole or in part, in its production facilities in Poland.⁶³ On information and belief, 3Shape TRIOS A/S and/or its agents have shipped the 3Shape Trios Intraoral Scanning Systems directly to distributors, resellers, and dental and orthodontic practices located in the United States from outside of the territorial boundaries of the United States.⁶⁴

84. On information and belief, “3shape TRIOS A/S owns the [accused intraoral scanners] at all times before and after they are shipped to the [United States].”⁶⁵

⁶² See –

https://dmec.moh.gov.vn/documents/10182/8373784/upload_00090040_1536570564894.pdf?version=1.0&fileId=8382876 at p. 21 (“This Product catalogue includes products that are developed and manufactured by 3Shape A/S, 3Shape TRIOS A/S and 3Shape Medical A/S.”). See also the 3Shape Trios Intraoral Scanning System at pp. 3-6, 8-9, 18-20 and 3Shape Scan Bodies at pp. 10 & 14-16.

⁶³ See <https://www.3shape.com/en/press/2015/3shape-poland-facility-expansion> ; <https://eu.dental-tribune.com/news/3shape-goes-green-with-new-production-facility-in-poland/>

⁶⁴ See <https://webcache.googleusercontent.com/search?q=cache:4-8a3EBwzLAJ:https://app.linklog2.dk/administration/departure/print/305/+&cd=4&hl=en&ct=clnk&gl=us>

⁶⁵ See Color Intraoral Scanners and Related Hardware and Software ITC-337-TA-1091, Respondents 3Shape A/S, 3Shape Trios A/S, and 3Shape Inc.’s Post-Hearing Responsive Brief at p. 3. (Exhibit 4)

85. On information and belief, 3Shape manufactures the accused 3Shape Scan Bodies in its production facilities in Poland.⁶⁶ On information and belief, 3Shape owns the accused 3Shape Scan Bodies at all times before and after they are shipped to the United States.

86. On information and belief, 3Shape holds legal title to the Accused Products during at least some portion of the time beginning with the placement of such products in the stream of commerce and the delivery of such products to the users of such products.

87. On information and belief, 3Shape, has imported the Accused Products into the United States for sale and/or distribution to customers residing in the State of Texas and this judicial district.

BACKGROUND

88. The patents-in-suit are the result of Densys' research, design and development of innovative and proprietary three-dimensional intra-oral imaging technologies, which were led by Dr. Maurice Moshe Ernst, Densys' founder and an inventor of the patents-in-suit.

89. On information and belief, defendant 3Shape designs, develops, manufactures, and markets the accused three-dimensional intraoral scanners, including

⁶⁶ See at p. 56, https://www.henryschein.be/be-fr/images/labo/3shape_d900_d500_eng.pdf

but not limited to the “TRIOS” branded scanners.⁶⁷ (Collectively referred to herein as “3Shape Trios Intraoral Scanners.”). 3Shape Trios Intraoral Scanners work in conjunction with a host of other software and hardware components to form a complete intraoral scanning system. (“3Shape Trios Intraoral Scanning System”).

90. On information and belief, software and hardware components of the 3Shape Trios Intraoral Scanning System, as well as other products for dental and orthodontic applications including, but not limited to, surgical guides, crowns, bridges, bracket templates, aligners, implants, “3Shape Anatomy Design software,”⁶⁸ “3Shape Dental Desktop,”⁶⁹ “Dental System,”⁷⁰ “Implant Studio,”⁷¹ “Lab Scanners,”⁷² “Ortho

⁶⁷ The accused 3Shape Intraoral Scanning Systems and related accused components have been registered by 3Shape TRIOS A/S with the United States Library of Medicine under at least 115 different Global Unique Device Identification Database (GUDID) numbers. See

[https://accessgudid.nlm.nih.gov/devices/search?filters%5BCompany+Name%5D%5B%5D=3shape+Trios+A%2FS&page=1&page_size=50&query=%28\"trios\"%29](https://accessgudid.nlm.nih.gov/devices/search?filters%5BCompany+Name%5D%5B%5D=3shape+Trios+A%2FS&page=1&page_size=50&query=%28\) (Exhibit 5).

⁶⁸ See <https://embed.widencdn.net/pdf/plus/3shape/epig8w5sbn/Anatomy-Design-User-Manual-2.2.2-B-EN.pdf>.

⁶⁹ See <https://embed.widencdn.net/pdf/plus/3shape/cixhqulecw/Dental-Desktop-User-Manual-1.6.9.x-A-EN.pdf>.

⁷⁰ See <https://embed.widencdn.net/pdf/plus/3shape/0igeihsi4r/Dental-System-User-Manual---2.19.3.0-A-EN.pdf>.

⁷¹ See <https://embed.widencdn.net/pdf/plus/3shape/4xykajex3w/Implant-Studio-User-Manual-2.17.2-C-EN.pdf>.

⁷² See <https://embed.widencdn.net/pdf/plus/3shape/0igeihsi4r/Dental-System-User-Manual---2.19.3.0-A-EN.pdf>.

System,”⁷³ “Trios Module,”⁷⁴ “Trios Patient Monitoring,”⁷⁵ and “Trios Treatment Simulator,”⁷⁶ products and services associated with the 3Shape Trios Intraoral Scanning System, (the “Accused Associated Products”), infringe one or more of the claims of the patents-in-suit, or else are subject to a convoyed and/or derivative sales damages theory.

91. On information and belief, the 3Shape Trios Scanning System supports indications including: bridges, diagnostic wax-ups, digital temps, implants, implant bars, implant bars, implant bridges, implant planning, surgical guides, inlays, onlays, orthodontics, splints, posts, cores, removable partial dentures, single crowns, and veneers, as demonstrated by the screenshot below:

⁷³ See <https://embed.widencdn.net/pdf/plus/3shape/tbjzukydo/Ortho-System-Technical-Documentation-1.9.2-A-EN.pdf?>.

⁷⁴ See <https://embed.widencdn.net/pdf/plus/3shape/hbdyfk2ngg/TRIOS-Module-User-Manual--2019-1.18.2-A-EN.pdf>.

⁷⁵ See <https://embed.widencdn.net/pdf/plus/3shape/vehlxxjmu6/TPM-2.1.2-E-EN.pdf>.

⁷⁶ See <https://embed.widencdn.net/pdf/plus/3shape/py1d7ufbt4/TTS-1.4.0.0-A-EN.pdf>.

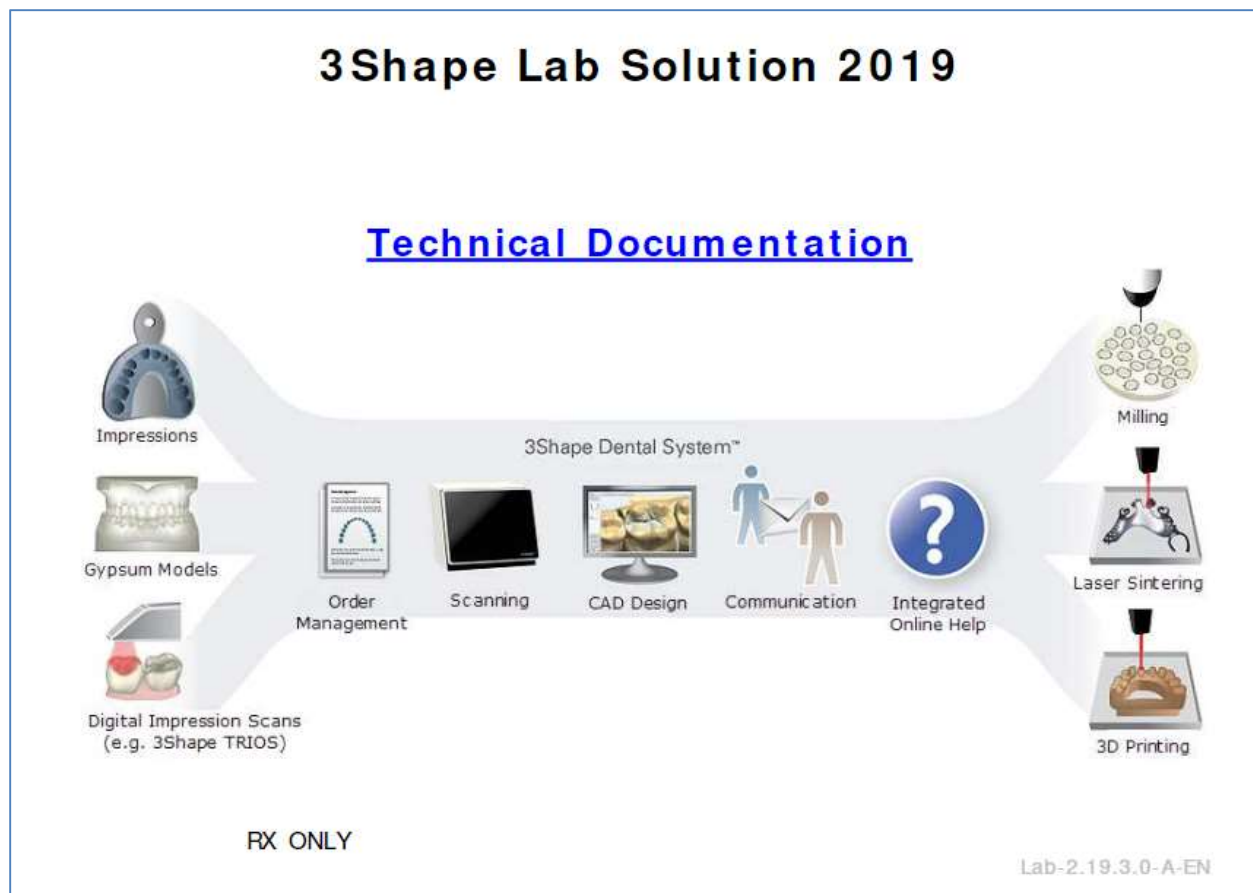
1.2 Indications

3Shape TRIOS® module supports the following indications:

- **Bridges** (up to 5 units)
- **Diagnostic wax-ups and digital temps**
- **Implants** (single abutments)
- **Implant bars and bridges** (up to 3 units)
- **Implant planning and surgical guides** (only available after a purchase of the add-on module)
- **Inlays**
- **Onlays**
- **Orthodontics and Splints** (only available after a purchase of the add-on module)
- **Post & core**
- **Removable Partial Dentures**
- **Single crowns**
- **Veneers**

See <https://embed.widencdn.net/pdf/plus/3shape/hbdyfk2ngg/TRIOS-Module-User-Manual--2019-1.18.2-A-EN.pdf>.

92. On information and belief, digital impression scans taken with the 3Shape Intraoral Scanning System are used by dental labs in conjunction with order management, scanning, CAD design, patient communication, milling, laser sintering, and 3D printing of products that are components of single dental system, as is demonstrated by the graphic below:



See <https://embed.widencdn.net/pdf/plus/3shape/uwtzjfjvv9/Lab-Technical-Documentation-2.19.3.0-A-EN.pdf>.

93. On information and belief, dentists and orthodontists use the Accused Products in combination with the Accused Associated Products to generate digital impressions, digital images, and digital measurements for the purpose of performing dental procedures on patients.⁷⁷ On information and belief, dental procedures that dentists perform with the assistance of the Accused Products and the Accused Associated Products include charting an oral condition, diagnosing an oral condition,

⁷⁷ See '707 patent, claim 34-36, 67-68.

and treating an oral condition, of the dental patient.⁷⁸ More specifically, on information and belief, the dental procedures that dentists perform with the assistance of the Accused Products the Accused Associated Products include general dental maintenance, dental mapping, dental surgery, dental restoration, orthodontics, periodontics, occlusal registration, and temporomandibular joint (TMJ) dysfunction therapies, dental restorations, and dental prostheses including crowns, bridges, dentures, and implants.⁷⁹

94. On information and belief, 3Shape designs, develops, manufactures, and markets 3Shape Scan Bodies⁸⁰, which are intended to assist the intraoral scanning process. On information and belief, the 3Shape Scan Bodies infringe one or more of the patents-in-suit.

95. On information and belief, through the course of discovery, it is anticipated that additional infringing products and services, and products and services subject to a conveyed sales theory may be identified.

96. On information and belief, 3Shape is further involved in the sale of and/or importation into the United States of intraoral scanners, scan bodies, Accused

⁷⁸ See '707 patent, claim 34-36, 67-68.

⁷⁹ See '707 patent, claim 34-36, 67-68.

⁸⁰ The accused 3Shape Scan Bodies have been registered by 3Shape A/S and 3Shape TRIOS A/S with the United States Library of Medicine under at least 51 different Global Unique Device Identification Database (GUDID) numbers. See https://accessgudid.nlm.nih.gov/devices/search?page=1&page_size=50&query=%28%223shape+scan+bodies%22%29 (Exhibit 6)

Products, the Accused Associated Products, and other products for dental and orthodontic applications including, but not limited to, crowns, bridges, bracket templates, aligners and implants.

97. On information and belief, 3Shape's intraoral scanners, digital and physical models generated from digital data using 3Shape software, and 3Shape's hardware and software products for dental and orthodontic applications described above embody and/or use the patented apparatuses, systems, and methods at issue.

3SHAPE'S WILLFUL PATENT INFRINGEMENT

98. On information and belief, 3Shape developed, made, and sold its infringing 3Shape Trios Intraoral Scanning Systems despite having knowledge of one or more of the Densys patents-at-issue.

99. Dr. Rune Fisker, Senior Vice President of Product Strategy⁸¹ for 3Shape A/S, has previously testified that 3Shape first began development of the 3Shape Trios Intraoral Scanning Systems in or about 2007 or 2008,⁸² well after the issuance of the '707 patent in 2002.⁸³

100. Dr. Fisker has further testified that 3Shape "did a lot of freedom-to-operate analysis" and that "no lawyers were involved" in that analysis.⁸⁴

⁸¹ See <https://careers.3shape.com/people/381999-rune-fisker>

⁸² See Ex. 3 at pp. 709-710, 717.

⁸³ See Ex. 1.

⁸⁴ See Ex. 3 at pp. 726.

101. On information and belief, on about May 9, 2006 and before the time 3Shape first began developing an intraoral scanner, Mr. Nikolaj Deichmann, in his then-capacity as a “VP” of 3Shape A/S, wrote to Densys to inquire “how you company might be interested in exploring business opportunities with 3Shape.”

102. On information and belief, Mr. Deichmann is a current Co-CEO, CFO, and Board of Directors Member, and the Co-founder of 3Shape.⁸⁵

103. On information and belief, Mr. Deichmann invited Densys to visit 3Shape’s offices on or about March 16, 2010.

104. On information and belief, on or about March 16, 2010, Dr. Ernst met with Mr. Tais Clausen, current Co-CEO and Board of Directors Member, and Co-Founder of 3Shape.⁸⁶

105. 3Shape has been on actual notice of the ’707 patent at least as early as March, 2010, when Dr. Ernst visited 3Shape’s offices for the purpose of exploring a collaboration in the development of intraoral scanning technologies, and during which Dr. Ernst mentioned to Mr. Tais the existence of the ’707 patent.

106. On information and belief, an attorney representing Densys wrote a letter, dated March 22, 2012, and sent by registered mail, to then-President & then-CEO, and

⁸⁵ See <https://www.linkedin.com/in/nikolaj-deichmann-611b523/?originalSubdomain=dk>.

⁸⁶ See <https://dk.linkedin.com/in/tais-clausen-8987655>.

current board member of 3Shape, Mr. Flemming Thorup,⁸⁷ giving written notice to 3Shape of its infringement of the '707 patent. ("The 2012 Patent Infringement Notice Letter"; Exhibit 7).

107. On information and belief, 3Shape A/S and 3Shape TRIOS A/S are related sister companies commonly held by the same holding company, 3Shape Holding A/S. On information and belief, 3Shape A/S and 3Shape TRIOS A/S operate under the control of 3Shape Holdings A/S, share a single corporate headquarters, and have been co-managed by the same principals.

108. The 2012 Patent Infringement Notice Letter was mailed to: "Holmens Kanal 7, 1060 Copenhagen K, Denmark," the then-existing and current mailing address of the 3Shape defendants.

109. On information and belief, prior to, and subsequent to, the receipt of The 2012 Patent Infringement Notice Letter, Mr. Flemming Thorup, the addressee of The 2012 Patent Infringement Notice Letter, has held the title of, or affiliation of, "Direktion" or "Management," of 3Shape A/S, 3Shape Trios A/S, and 3Shape Holding A/S.⁸⁸

110. On information and belief, 3Shape has never informed Densys that its 2012 written infringement allegations of the '707 patent were incorrect.

⁸⁷ See

<https://datacvr.virk.dk/data/visenhed?enhedstype=person&id=4004008917&language=en-gb>

⁸⁸ See

<https://datacvr.virk.dk/data/visenhed?enhedstype=person&id=4004008917&language=en-gb>

111. On information and belief, at least since its 2012 receipt of The 2012 Patent Infringement Notice Letter, 3Shape's infringing activities, including but not limited to the making, use, importation, sale, and offers to sell the 3Shape Intraoral Scanning System arose upon a culpable, intentional, and deliberate disregard for the property rights of Densys, and therefore constitute acts of willful infringement. *See* 35 USC § 284.

United States Patent No. 6,402,707

112. On June 11, 2002, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 6,402,707 ("the '707 patent") entitled "Method and system for real time intra-orally acquiring and registering three-dimensional measurements and images of intra-oral objects and features" to Maurice M. Ernst. A true and correct copy of the '707 patent is attached as Exhibit 1.

113. The '707 patent is presumed valid under 35 U.S.C. § 282.

114. Densys owns all rights, title, and interest in the '707 patent.

115. Densys has not granted 3Shape a license with respect to the '707 patent.

116. The '707 patent relates to, among other things, a real time three-dimensional intra-oral recording method and system.

United States Patent No. 9,222,768

117. On December 29, 2015, the USPTO duly and legally issued United States Patent No. 9,222,768 ("the '768 patent") entitled "Supplemental scene reference surface devices for three-dimensional mapping" to inventors Maurice Moshe Ernst, Micha

Geffen, Uri Raz, Udi Cohen, and Uri Neta. A true and correct copy of the '768 patent is attached as Exhibit 2.

118. The '768 patent is presumed valid under 35 U.S.C. § 282.

119. Densys owns all rights, title and interest in the '768 patent.

120. Densys has not granted 3Shape a license with respect to the '768 patent.

121. The '768 patent relates to, among other things, a device which can be attached to an intraoral feature for use in three-dimensional modeling of intraoral scenes having reference surfaces with orientation and position indicia.

CLAIMS FOR RELIEF

Count I – Infringement of United States Patent No. 6,402,707

122. Densys repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs, as set forth above.

123. 3Shape (or those acting on its behalf) makes, uses, sells and/or offers to sell, and imports products and services in the United States that utilize the innovations of the '707 patent. For example, the 3Shape Trios Intraoral Scanning System, which includes all of the intraoral scanning systems sold or distributed under the "Trios" brand name including but not limited to: "Trios," "Trios 2012," "TRIOS Color 2013," "TRIOS Cart Standard 2013," "Trios Cart Color 2013," "Trios Pod 2013/2014," "TRIOS 3," "TRIOS 3 Wireless," "TRIOS 3 Mono 2016," "TRIOS 3 Basic," and "Trios 4" is configured to perform a scanning method that infringes (literally and/or under the doctrine of equivalents) at least independent claims 1 and 37 of the '707 patent.

124. Claim 1 of the '707 patent covers:

1. A method for real time intra-orally acquiring and registering three-dimensional measurements and images of intra-oral objects and features, the intra-oral objects and features are located inside the oral cavity of a dental patient, comprising the steps of:

(a) establishing an intra-oral fixed global registration position inside the oral cavity of the dental patient, said intra-oral fixed global registration position is definable in terms of global coordinate space of the oral cavity, said global coordinate space is associated with a fixed global reference coordinate system, said global coordinate space includes a plurality of intra-oral local coordinate spaces in the oral cavity;

(b) providing a measuring and imaging device for measuring and imaging the intra-oral objects and features located in the oral cavity;

(c) selecting a field of view of said measuring and imaging device located at a global position in said global coordinate space of the oral cavity;

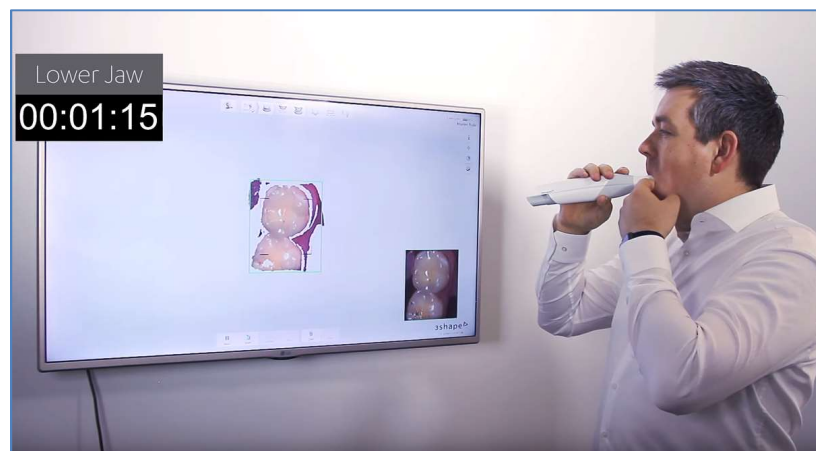
(d) acquiring at least one three-dimensional measurement and image of the intra-oral objects and features located in said selected field of view of said measuring and imaging device, and, recording said global position of said measuring and imaging device relative to said intra-oral fixed global registration position, for forming at least one globally recorded three-dimensional measurement and image of the intra-oral objects and features located in the oral cavity;

(e) repeating step (c) and step (d) for a plurality of said global positions and a plurality of said fields of view of said measuring and imaging device, for forming a plurality of said globally recorded three-dimensional measurements and images of the intra-oral objects and features located in the oral cavity of the dental patient; and

(f) registering local coordinate space pixel positions in each of said plurality of globally recorded three-dimensional measurements and images with corresponding global coordinate space pixel positions, for forming a plurality of the three-dimensional measurements and images of the intra-oral objects and features located in the oral cavity of the dental patient which are registered relative to same said intra-oral fixed global registration position

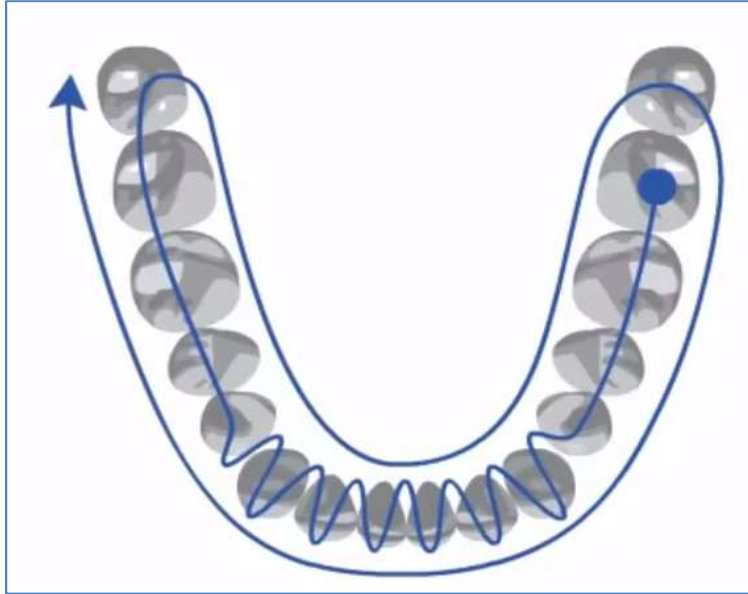
125. Upon information and belief, the 3Shape Intraoral Scanning System, meets each and every limitation of claim 1 of the '707 patent enumerated above.

126. On information and belief, the 3Shape Trios Intraoral Scanning System is configured to perform a method for real time intra-orally acquiring and registering three-dimensional measurements and images of intra-oral objects and features, where the intra-oral objects and features are located inside the oral cavity of a dental patient.



See https://www.youtube.com/watch?v=-Q3e_sPFKCc

127. On information and belief, the 3Shape Trios Intraoral Scanning System establishes a fixed global registration position inside the oral cavity of the dental patient as is demonstrated by the blue circle in the instructional image below:

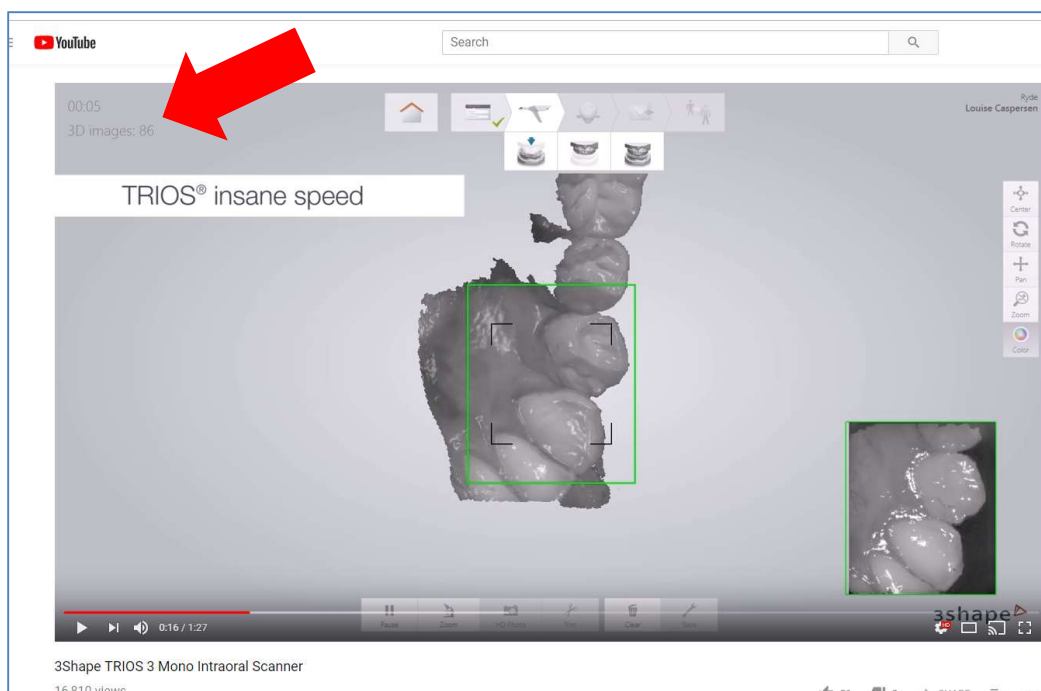


See https://www.youtube.com/watch?v=M_KbWcCianY at time marker 0:41.

128. On information and belief, the fixed global registration position established by the 3Shape Trios Intraoral Scanning System is definable in terms of global coordinate space of the oral cavity.

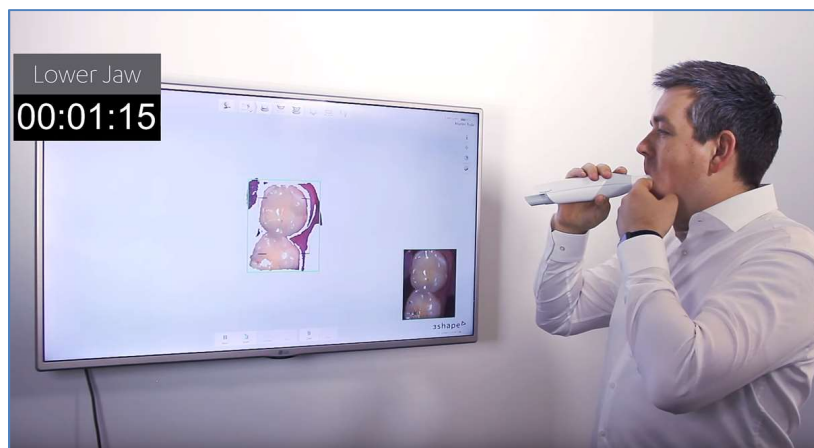
129. On information and belief, the 3Shape Trios Intraoral Scanning System defines a global coordinate space that the 3Shape Trios Intraoral Scanning System software associates with a fixed global reference coordinate system.

130. On information and belief, the 3Shape Trios Intraoral Scanning System defines a global coordinate space that includes a plurality of intra-oral local coordinate spaces in the oral cavity, as is demonstrated by the screen capture below which notes that 86 “3D Images” have been captured by the 3Shape Trios Intraoral Scanning System, where each of the “3D Images” is associated with a corresponding intra-oral local coordinate space located in the oral cavity.



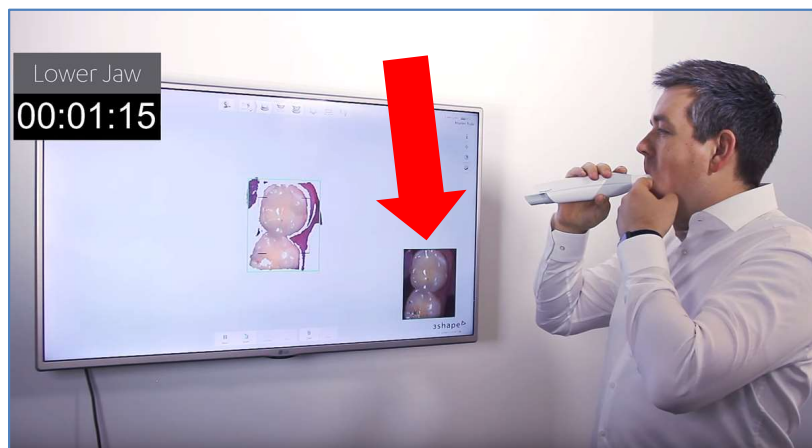
See <https://www.youtube.com/watch?v=HT0RdNPXgRs>

131. On information and belief, the 3Shape Trios Intraoral Scanning System is a measuring and imaging device for measuring and imaging the intra-oral objects and features located in the oral cavity, as demonstrated by the image below:



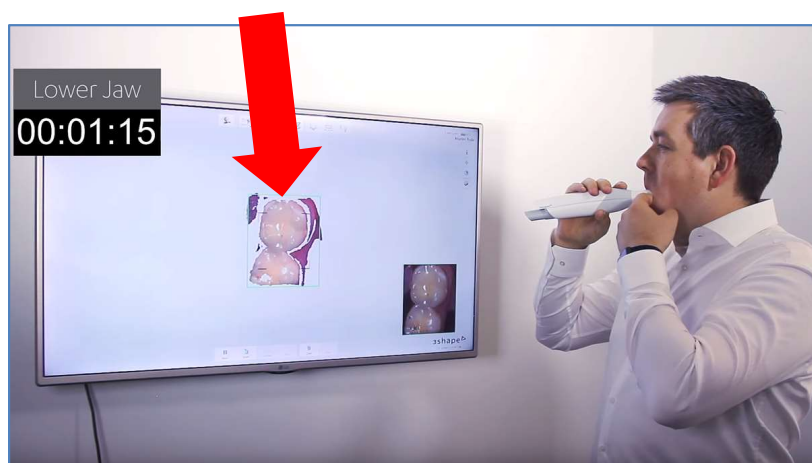
See https://www.youtube.com/watch?v=-Q3e_sPFKCc

132. On information and belief, the 3Shape Trios Intraoral Scanning System is used to select a field of view, identified by the red arrow below, while it is located at a global position in said global coordinate space of the oral cavity:



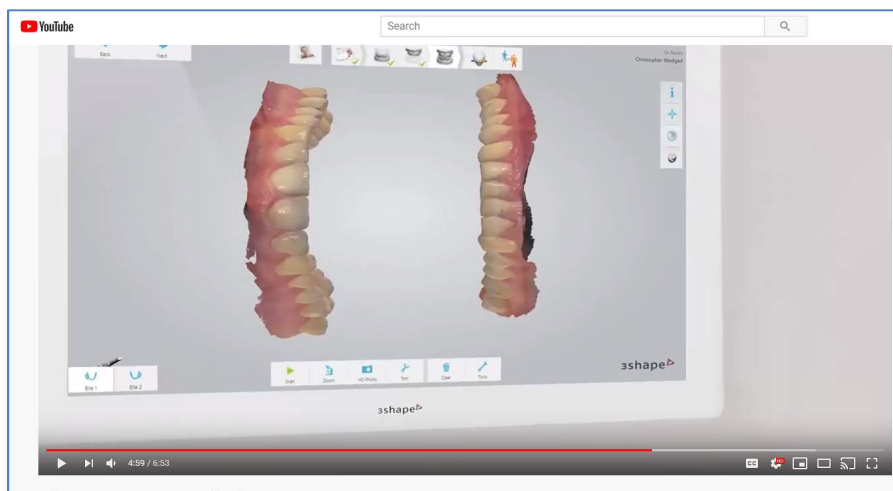
See https://www.youtube.com/watch?v=-Q3e_sPFKCc.

133. On information and belief, the 3Shape Trios Intraoral Scanning System acquires at least one three-dimensional measurement and image, as demonstrated by the red arrow in the image below, of the intra-oral objects and features in said selected field of view of said measuring and imaging device



See https://www.youtube.com/watch?v=-Q3e_sPFKCCc.⁸⁹

134. On information and belief, the 3Shape Trios Intraoral Scanning System records the position of the 3Shape Trios Intraoral Scanner relative to an intraoral fixed global registration position, for forming at least one globally recorded three-dimensional measurement and image of the intra-oral objects and features located in the oral cavity as demonstrated by the screen capture below:



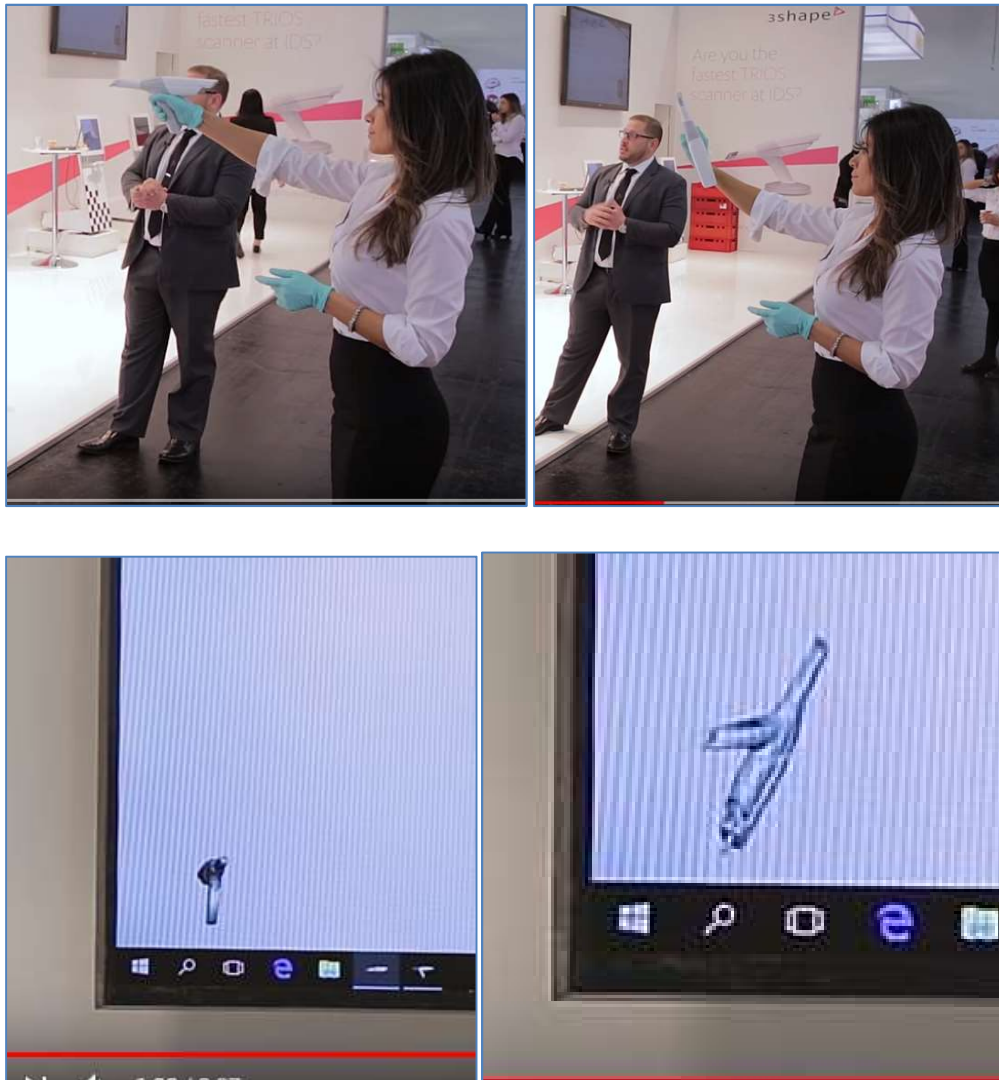
See e.g. https://www.youtube.com/watch?v=M_KbWcCianY at time marker 4:59.

135. On information and belief, the 3Shape Trios Intraoral Scanning System is equipped with a “unique motion sensor interface” that allows the system to record the global position of the scanner, as is demonstrated beginning at the 1:09 time mark of the following YouTube video: <https://www.youtube.com/watch?v=Rvz25TDf5s0>

⁸⁹ See also ALTuwaijri, Sahr. Multiple implants impression accuracy of edentulous jaw: digital and conventional implant impression comparative study. Diss. *University of British Columbia*, 2018 available at <https://open.library.ubc.ca/media/download/pdf/24/1.0371131/4>, generally discussing accuracy of measurements taken by the 3Shape Trios Intraoral Scanning System.

136. On information and belief, the ability of the 3Shape Trios Intraoral Scanning System to track the motion of the 3Shape Trios Intraoral Scanner is further demonstrated by the following series of screen captures obtained from the above-referenced YouTube video.

137. The following top two photographs shown below, depict scanner movement, which is indicated by the related changes in icon representing the scanner, which is shown in the bottom third and fourth photographs in the below series.



See <https://www.youtube.com/watch?v=Rvz25TDf5s0> . See also, 1:05-1:15 of the following YouTube video https://www.youtube.com/watch?v=-Q3e_sPFKCc

138. On information and belief, the ability to track the motion of the 3Shape Trios Intraoral Scanner is additionally referenced in 3Shape's marketing materials, which state that "3Shape demonstrated a smart TRIOS® feature – a motion sensor interface that enables the hand-held to virtually rotate and turn the digital impression like a gaming controller."⁹⁰

139. On information and belief, the 3Shape Trios Intraoral Scanning System utilizes motion-detecting sensors in order to facilitate the processing and registration of measurements and images of objects and images located in the oral cavity.

140. On information and belief, publicly available documents concerning the 3Shape Trios Intraoral Scanner claim that multiple images are connected by the 3Shape Trios Intraoral Scanning System, in part, based on data recordings of a "Gyro Sensor."⁹¹

141. On information and belief, the 3Shape Trios Intraoral Scanning System utilizes motion sensors in order to record the global position of the 3Shape Trios Intraoral Scanner relative to a fixed intraoral global registration position, for forming at

⁹⁰See <http://www.3shape.com/media/611283/3Shape-PR-Trios-launched%20at%20IDS-22-3-2011.pdf>

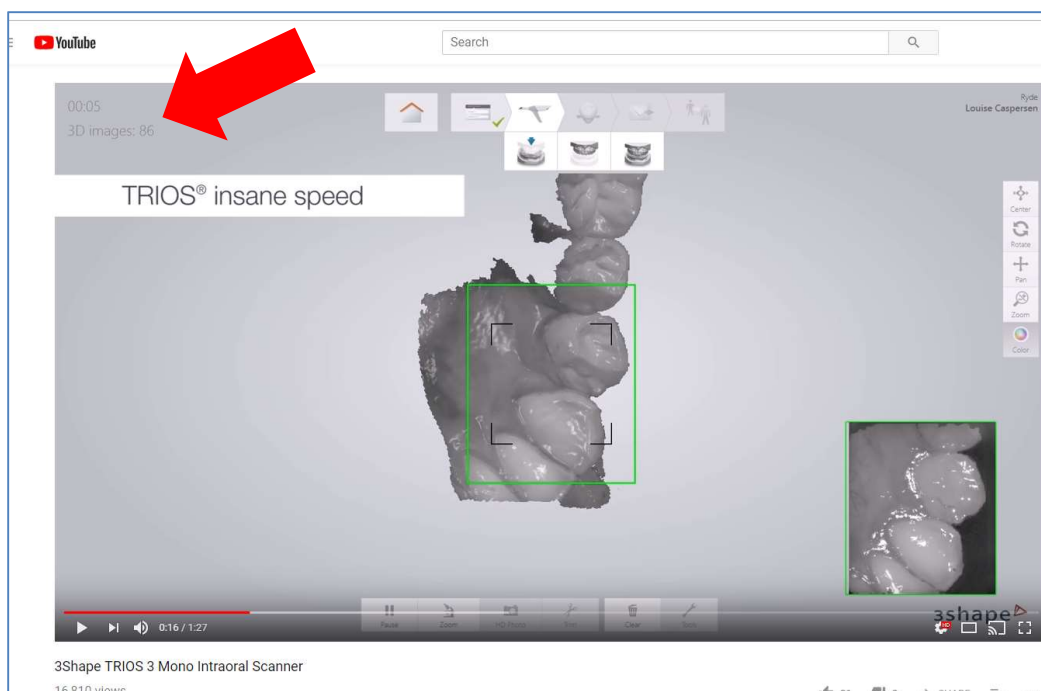
⁹¹See German language document available at https://www.zwp-online.info/files/55007/document4_0.pdf (German: "Wie werden mehrere Aufnahmen miteinander verbunden? Cloud Volume Matching + Gyro Sensor, Software verbindet Aufnahmen automatisch"; English translation: "How are multiple shots connected? Cloud Volume Matching + Gyro Sensor, Software connects recordings automatically.")

least one globally recorded measurement and image of intraoral objects and features located in the oral cavity.

142. On information and belief, the 3Shape Trios Intraoral Scanning System repeats the three-dimensional data registration process for a plurality measurements and images as is demonstrated by statements in their marketing materials, which claim that the 3Shape Trios Intraoral Scanner captures “over 3000 2D images per second.”⁹² On information and belief, the iterative process of the 3Shape Trios Intraoral Scanning System captures a plurality of global positions and a plurality of fields of view is further demonstrated by the top left hand side of the below-linked YouTube video,⁹³ which counts the number of 3D images registered by the Trios scanner. For example, in the screen capture the field of view counter shows “3D Images 86.”

⁹² See <https://www.3shape.com/media/611283/3Shape-PR-Trios-launched%20at%20IDS-22-3-2011.pdf>

⁹³ See <https://www.youtube.com/watch?v=HT0RdNPXgRs> beginning at time marker 0:11.



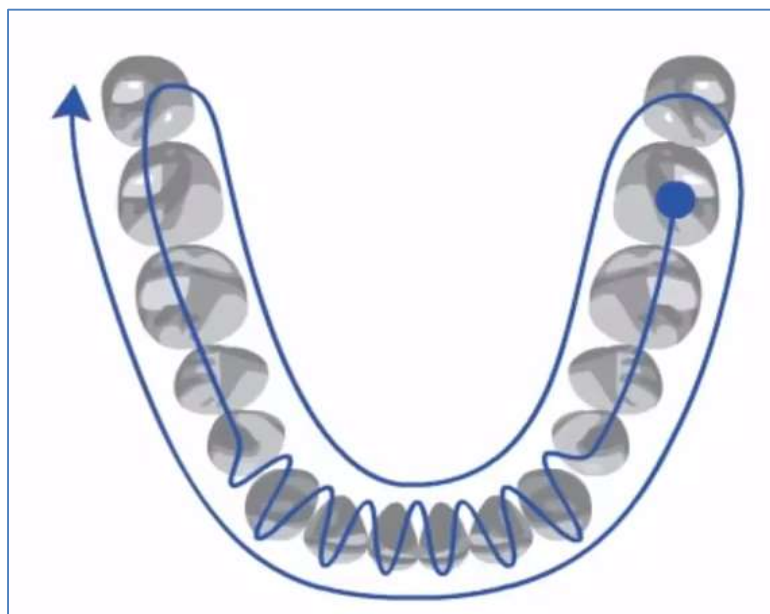
See <https://www.youtube.com/watch?v=HT0RdNPXgRs>

143. On information and belief, the 3Shape Trios Intraoral Scanning System registers local coordinate space pixel positions in each of the plurality of globally recorded three-dimensional measurements and images relative to the intra-oral fixed global registration position as is demonstrated by the gradual accumulation of 3D measurement data that is acquired throughout an intra-oral scan depicted in the screen captures below.



See <https://www.youtube.com/watch?v=HT0RdNPXgRs>

144. On information and belief, as additional three-dimensional data appears on the 3Shape Trios Intraoral Scanning System display it has been “registered” with respect the global coordinate space, which is defined by a global registration position. The registration of newly recorded data with respect to the global registration position is further demonstrated by the screen capture below, which shows that a continuous scanning path starts with a global registration position.



145. See https://www.youtube.com/watch?v=M_KbWcCianY at time marker 0:41.

146. Claim 37 of the '707 patent covers:

37. A system for real time intra-orally acquiring and registering three-dimensional measurements and images of intra-oral objects and features, where the intra-oral objects and features are located inside the oral cavity of a dental patient, comprising:

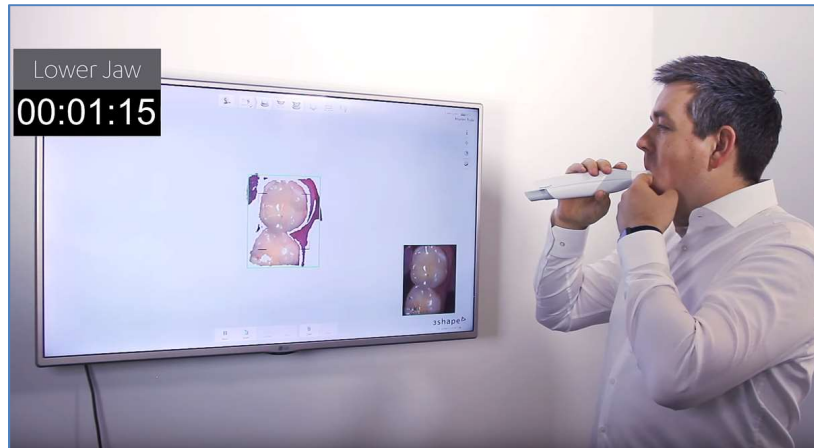
(a) an intra-oral fixed global registration position inside the oral cavity of the dental patient, said intra-oral fixed global registration position is definable in terms of global coordinate space of the oral cavity, said global coordinate space is associated with a fixed global reference coordinate system, said global coordinate space includes a plurality of intra-oral local coordinate spaces in the oral cavity;

(b) a measuring and imaging device for measuring and imaging the intra-oral objects and features located in the oral cavity, relative to same said intra-oral fixed global registration position; and

(c) a mobile registration device for measuring and recording global positions and orientations of said measuring and imaging device, relative to same said intra-oral fixed global registration position.

147. Upon information and belief, the 3Shape Intraoral Scanning System, meets each and every limitation of claim 37 of the '707 patent enumerated above.

148. On information and belief, the 3Shape Trios Intraoral Scanning System acquires and registers three-dimensional measurements and images of intra-oral objects and features in real time, where the intra-oral objects and features are located inside the oral cavity of a dental patient, as demonstrated by the video below:



See https://www.youtube.com/watch?v=-Q3e_sPFKCc

149. On information and belief, and as previously demonstrated, the 3Shape Trios Intraoral Scanning System defines an intra-oral fixed global registration position inside the oral cavity of the dental patient, said intra-oral fixed global registration position is definable in terms of global coordinate space of the oral cavity, said global coordinate space is associated with a fixed global reference coordinate system, said global coordinate space includes a plurality of intra-oral local coordinate spaces in the oral cavity.

150. On information and belief, and as previously demonstrated, the 3Shape Trios Intraoral Scanning System is comprised of a 3Shape Trios Intraoral Scanner for measuring and imaging the intra-oral objects and features located in the oral cavity. On information and belief, and as previously demonstrated, the measurements and images taken by the 3Shape Trios Intraoral Scanner are taken relative to an intraoral fixed global registration position.

151. On information and belief, and as previously demonstrated, the 3Shape Trios Intraoral Scanning System is comprised of one or more motion or gyroscopic

sensors for measuring and recording global positions and orientations of said measuring and imaging device, relative to an intraoral fixed global registration position.

152. On information and belief, at least since its 2012 receipt of The 2012 Patent Infringement Notice Letter, and its knowledge of the '707 patent, 3Shape knowingly encouraged, and continues to encourage, customers to directly infringe one or more claims of the '707 patent, including but not limited to claim 1 of the '707 patent, including by 3Shape's actions that include, without limitation, specifically instructing and actively encouraging customers to use the 3Shape Trios Intraoral Scanning System through user guides, user manuals,⁹⁴ its website,⁹⁵ advertisements,⁹⁶ promotional materials⁹⁷ and user instructions.

153. On information and belief, 3Shapes user guides, user manuals, advertisements, promotional materials and user instructions, instruct and actively encourage 3Shape's customers to practice each and every element of, at least, the method of claim 1 of the '707 patent.

154. On information and belief, at least since its 2012 receipt of The 2012 Patent Infringement Notice Letter, 3Shape knows that the acts 3Shape induced customers to

⁹⁴ See <https://embed.widencdn.net/pdf/plus/3shape/xt7bnel76t/TRIOS-User-Manual-2015-1-1.4.7.0-A-EN.pdf>.

⁹⁵ See <https://www.3shape.com/>.

⁹⁶ See e.g. <https://www.3shape.com/en/scanners/trios-4>.

⁹⁷ See e.g. <https://www.pattersondental.com/Media/Default/products/3Shape/3Shape-TRIOS-2019.pdf>.

take constitute patent infringement and 3Shape's encouraging acts result in direct infringement by customers.

155. On information and belief, 3Shape instructs and continues to instruct customers to use the 3Shape Trios Intraoral Scanning System, without limitation, through 3Shape's websites, which provide support for using the 3Shape Trios Intraoral Scanning System.

156. On information and belief, 3Shape's customers directly infringe at least claim 1 of the '707 patent through their use of the 3Shape Trios Intraoral Scanning System.

157. On information and belief, 3Shape is in violation of 35 U.S.C. § 271(b) and has been, at least since its post-filing knowledge of the '707 patent, indirectly infringing and continues to indirectly infringe at least claim 1 of the '707 patent by knowingly and specifically intending to induce infringement by others (including, without limitation, 3Shape's customers) and possessing specific intent to encourage infringement by 3Shape's customers. 3Shape's 3Shape Trios Intraoral Scanning System is specifically configured to function in accordance with the '707 patent claims, are material parts of the invention, and do not have substantial non-infringing uses.

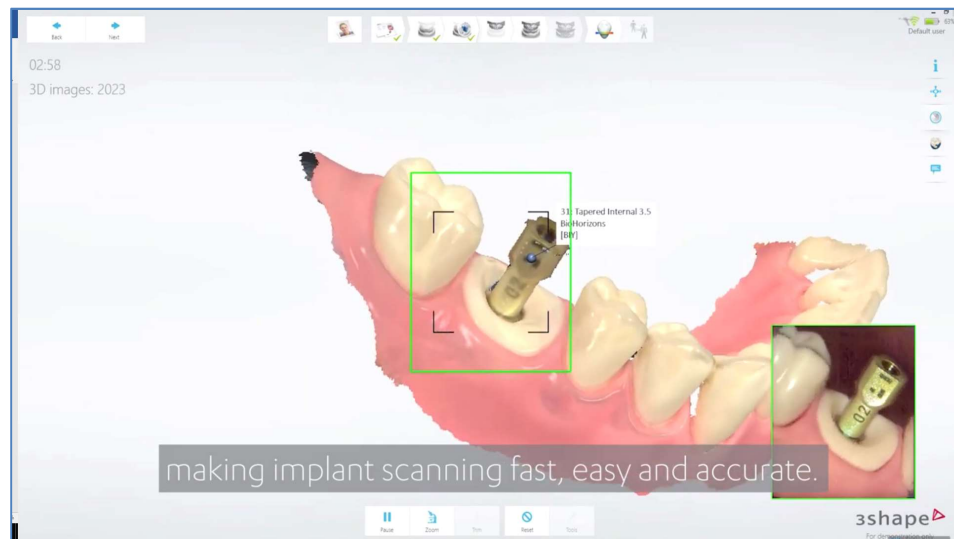
158. Densys has been damaged by the direct and/or indirect infringement of 3Shape and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

Count II - Infringement of United States Patent No. 9,222,768

159. Densys repeats, realleges, and incorporates by reference, as if fully set forth here, the allegations of the preceding paragraphs, as set forth above.

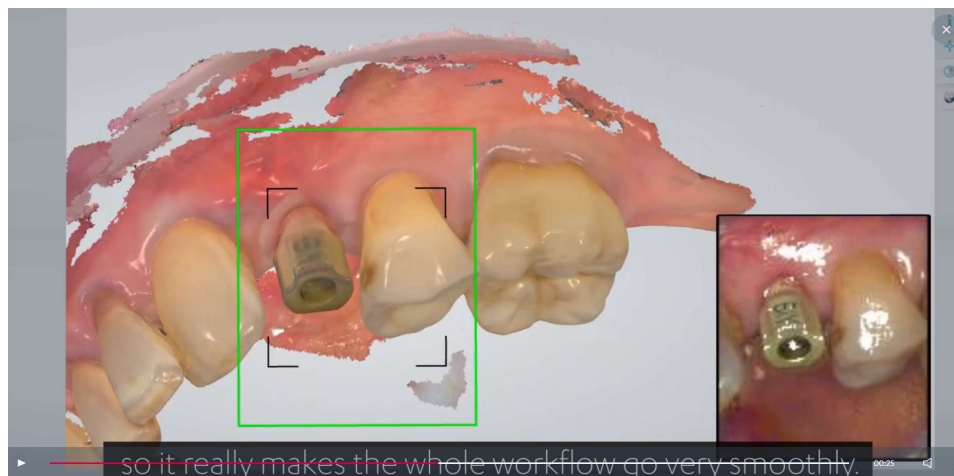
160. On information and belief 3Shape (or those acting on its behalf) make, use, import, sell, or offer to sell 3Shape Scan Bodies⁹⁸ and related products and services in the United States. The 3Shape Scan Bodies infringe (literally and/or under the doctrine of equivalents) at least claim 1 of the '768 patent.

161. On information and belief, 3Shape Scan Bodies are reference surface devices for use with the imaging of an intra-oral scene as demonstrated by the screen captures below:



See <https://www.youtube.com/watch?v=s-LnnPVgrHA>.

⁹⁸ See <https://www.3shape.com/en/scan-bodies>



See <https://www.3shape.com/en/scan-bodies>

162. On information and belief, the 3Shape Scan Bodies, shown below, are comprised of at least one sector including a length defining a first end of said at least one sector.



See <https://usstore.biohorizons.com/3shape-scan-body-kit-for-biohorizons-internal>



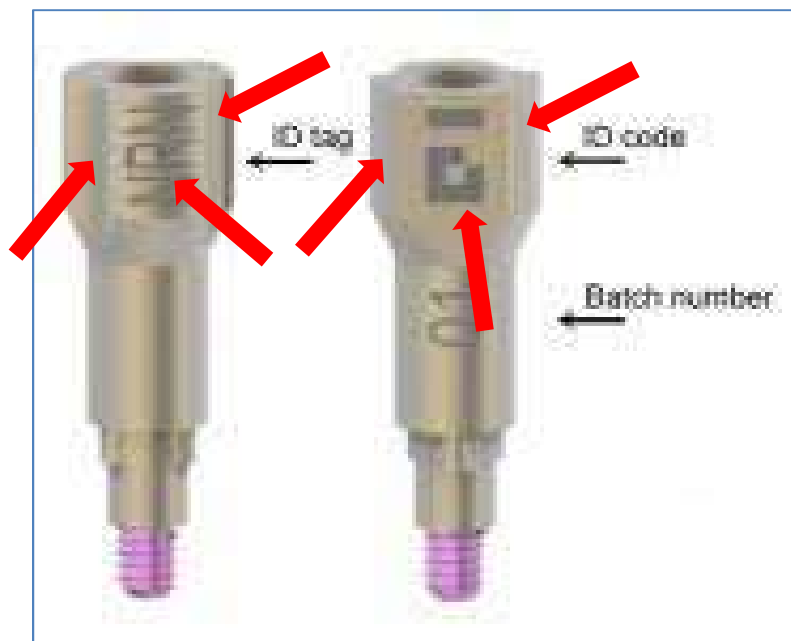
See

http://www.thailanddentallab.com/images/demo/content/trios/3Shape%20scan%20bodies%20FAQ_Feb17.pdf

163. On information and belief, the 3Shape Scan Bodies are comprised of a plurality of faces, indicated with arrows below, each face of said plurality of faces at an angular orientation with respect to each adjacent face.



See <https://usstore.biohorizons.com/3shape-scan-body-kit-for-biohorizons-internal>



See

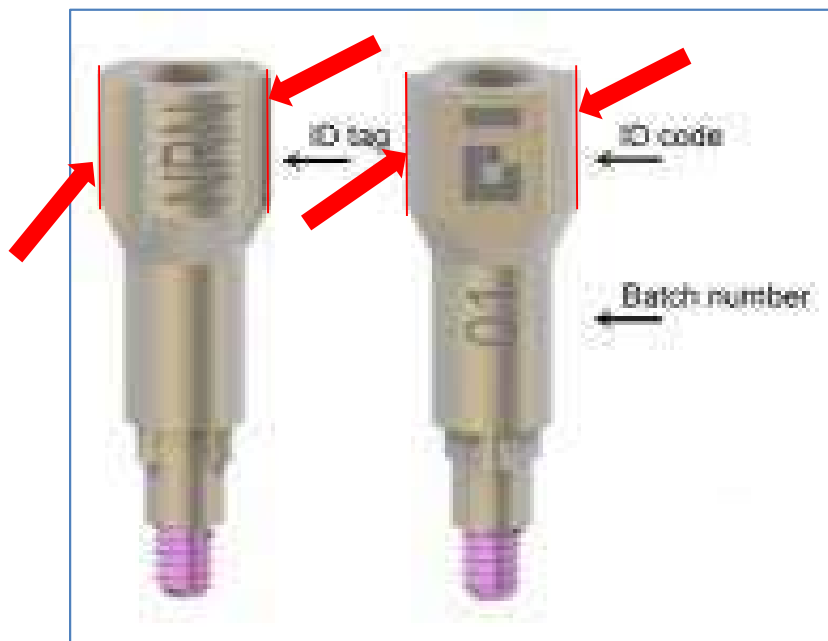
http://www.thailanddentallab.com/images/demo/content/trios/3Shape%20scan%20bodies%20FAQ_Feb17.pdf

164. On information and belief, the 3Shape Scan Bodies are comprised of a plurality of faces extending along the length, as identified below, of the at least one sector.



See <https://usstore.biohorizons.com/3shape-scan-body-kit-for-biohorizons-internal>

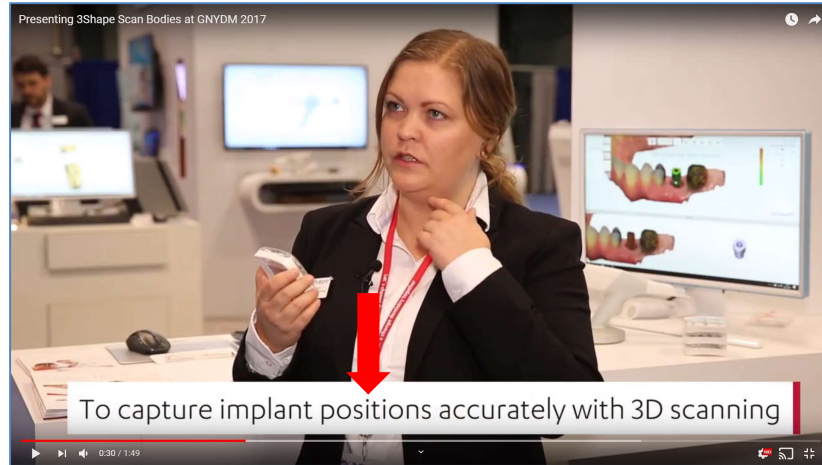
165. On information and belief, the 3Shape Scan Bodies are comprised of, at least one sector including oppositely disposed edges, identified below, which extend from the edges of the outermost faces to a second end of said at least one sector.



See

http://www.thailanddentallab.com/images/demo/content/trios/3Shape%20scan%20bodies%20FAQ_Feb17.pdf

166. On information and belief, the plurality of faces of the 3Shape Scan Bodies are configured to provide at least one fully intraoral reference surface operative to provide an identifiable positional characteristic.



See <https://www.youtube.com/watch?v=b3L6RSHMV84>

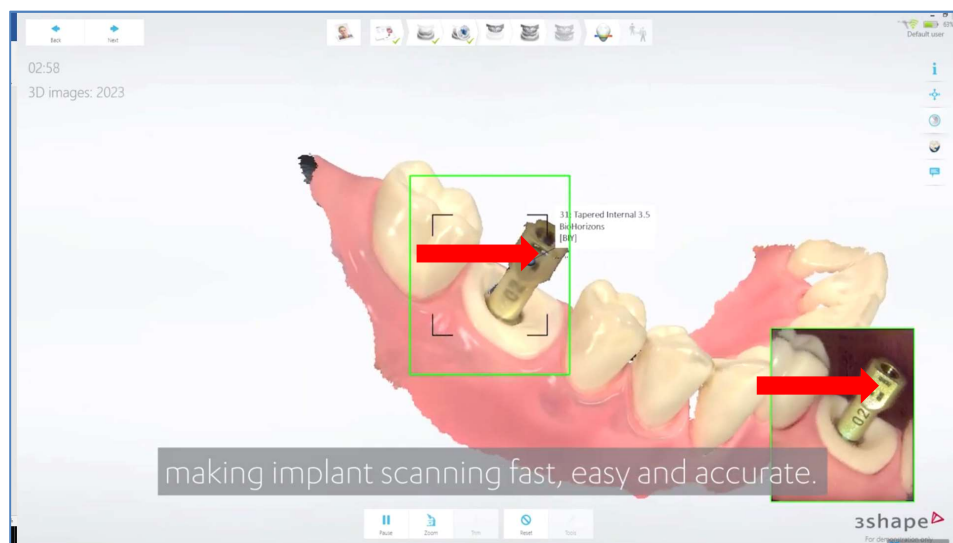
167. On information and belief, the 3Shape Scan Bodies are comprised of a mounting element, identified below, in communication with said second end of said at least one sector.



See <https://usstore.biohorizons.com/3shape-scan-body-kit-for-biohorizons-internal>

168. On information and belief, the 3Shape Scan Bodies are comprised of an identifiable positional characteristic, identified below, that is at a predetermined three-dimensional spatial position from a mounting point adapted to be attached to a feature having a substantially fixed location relative to said intra-oral scene, said intra-oral

scene being configured to provide information for determining the three-dimensional spatial position and orientation of a face on said reference surface device relative to the intra-oral scene.



See <https://www.youtube.com/watch?v=s-LnnPVgrHA>.

169. On information and belief, 3Shape has been on notice of the '768 patent at least as early as the filing and service of the Complaint in this action.

170. On information and belief, at least since its post-filing knowledge of the '768 Patent, 3Shape knowingly encourages, and continues to encourage, customers to directly infringe one or more claims of the '768 patent, including by 3Shape's actions that include, without limitation, instructing and encouraging customers to use 3Shape Scan Bodies through user guides/manuals, advertisement, promotional materials and instructions.

171. On information and belief, at least since its post-filing knowledge of the '768 patent, 3Shape knows that the acts 3Shape induced customers to take constitute

patent infringement and 3Shape's encouraging acts result in direct infringement by customers.

172. On information and belief, 3Shape instructs and continues to instruct customers to use 3Shape Scan Bodies, without limitation, through 3Shape's websites, which provide support for using 3Shape Scan Bodies.

173. On information and belief, 3Shape's customers directly infringe at least claim 1 of the '768 patent through their use of 3Shape Scan Bodies.

174. On information and belief, 3Shape is in violation of 35 U.S.C. § 271(b) and has been, at least since its post-filing knowledge of the '768 patent, indirectly infringing and continues to indirectly infringe at least claim 1 of the '768 patent by knowingly and specifically intending to induce infringement by others (including, without limitation, 3Shape's customers) and possessing specific intent to encourage infringement by 3Shape's customers. 3Shape's Scan Bodies are specifically configured to function in accordance with the '768 patent claims, are material parts of the invention, and do not have substantial non-infringing uses.

175. Densys has been damaged by the direct and/or indirect infringement of 3Shape and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

JURY DEMANDED

176. Pursuant to Federal Rule of Civil Procedure 38(b), Densys hereby requests a trial by jury on all issues so triable.

PRAYER FOR RELIEF

Densys respectfully requests this Court to enter judgment in Densys's favor and against 3Shape as follows:

- a. finding that 3Shape has infringed one or more claims of the '707 patent;
- b. finding that 3Shape has infringed one or more claims of the '768 patent;
- c. awarding Densys damages under 35 U.S.C. § 284, or otherwise permitted by law, including increased damages for any past and continued post-verdict willful infringement;
- d. awarding Densys pre-judgment and post-judgment interest on the damages award and costs;
- e. awarding costs of this action (including all disbursements) and attorney fees pursuant to 35 U.S.C. § 285, or as otherwise permitted by the law; and
- f. awarding such other costs and further relief that the Court determines to be just and equitable.

Dated: November 25, 2019

Respectfully submitted,

/s/Raymond W. Mort, III

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